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December 16, 2009

Ms. Erin Brittain  
Project Manager  
Voluntary Remediation Program  
Office of Land Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

Re: **Quarterly Monitoring Progress Report – 3rd Quarter 2009**  
**Michigan Plaza**  
3801-3823 West Michigan Street  
Indianapolis, Indiana 46222  
IDEM Incident # 0000198  
IDEM VRP # 6061202  
MUNDELL Project No. M01046

Dear Ms. Brittain:

This *Quarterly Monitoring Progress Report* is being submitted to the Indiana Department of Environmental Management (IDEM) by MUNDELL & ASSOCIATES, INC. (MUNDELL), on behalf of AIMCO, to summarize further site characterization, remediation activities and quarterly monitoring performed from July 1 through September 30, 2009. The following sections provide detailed discussions of the results of this work. All activities were completed on schedule.

#### **GROUNDWATER MONITORING NETWORK SAMPLING**

On August 5<sup>th</sup> to 7<sup>th</sup>, 2009, quarterly groundwater sampling of the existing twenty-four (24) monitoring wells established with IDEM, and the two (2) additional monitoring wells on the Floral Park Cemetery property was performed. The following constitute this quarterly groundwater monitoring network:

- 1) *Twenty-four MUNDELL monitoring wells:* MMW-1S, MMW-8S, MMW-9S, MMW-10S, MMW-11S, MMW-11D, MMW-12S, MMW-13D, MMW-14D, MMW-P-01, MMW-P-02, MMW-P-03S, MMW-P-03D, MMW-P-04, MMW-P-05, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-09S, MMW-P-09D, MMW-P-10S,

MMW-P-10D, and MMW-C-01 and MMW-C-02 (MUNDELL wells on Floral Park Property)

2) *Two (2) Keramida monitoring wells:* MW-168S and MW-168D.

In addition to collection of groundwater levels from each of the above mentioned monitoring wells, MUNDELL measured static groundwater elevations via an electric oil/water interface probe from four nests of Keramida monitoring wells surrounding the Plaza Property for the purpose of more accurately determining the groundwater flow direction and gradient over this wider area. The following additional wells had their groundwater levels measured this quarter:

1) *Eight (8) Keramida monitoring wells:* MW-167S, MW-167D, MW-169S, MW-169D, MW-170S, MW-170D, MW-171S and MW-171D.

During this investigation, monitoring well MMW-P-04 was found to contain approximately 10-inches of CAP-18 oil at the top of the water table. All monitoring well sampling, survey and construction data are provided in **Tables 1, 2** and **2a**, respectively, and the potentiometric map is illustrated in **Figure 1**.

The wells were sampled utilizing the newly installed dedicated bladder pumps for uniform low-flow purging and sample collection. The Troll 9500 multi-parameter meter (used inline with the dedicated bladder pumps) logs geochemical parameters (temperature, pH, dissolved oxygen, conductivity, and oxidation reduction potential), which help remove a minimal but sufficient amount of water (indicated by stabilization of geochemical parameters) to sample the well. The troll helps assess the geochemical parameters as evidence of conditions naturally conducive to natural attenuation existing in the aquifer. All excess purge water was transported to 55-gallon drums located at the Site for proper disposal.

As agreed in the October 29<sup>th</sup>, 2008 meeting with IDEM, and detailed in the *RWP Addendum November 2008*, groundwater samples were submitted to Pace Analytical Laboratories (Pace) in Indianapolis, Indiana for the shorter list of VOC analysis via U.S. EPA SW-846 Method 8260, along with appropriate duplicate (DUP), matrix spike (MS) and matrix spike duplicate (MSD). Groundwater samples were transferred into three 40-milliliter glass sample vials containing the preservative hydrochloric acid (HCl). Groundwater sample vials were sealed in plastic bags and placed in a cooler containing ice and delivered to Pace using appropriate chain-of-custody protocol for laboratory tests. Pace laboratory certificates of analysis for the groundwater samples analyzed are presented in **Appendix A**.

Baseline groundwater geochemical parameters (pH, dissolved oxygen, oxidation-reduction potential, conductivity, and temperature) were measured with a low-flow cell and multi-parameter water quality probe in the post-injection period to evaluate whether aquifer conditions continue to be favorable for natural attenuation of the indicator compounds at the Site.

Additional aquifer chemical parameter testing has been performed in the past and will be scheduled based on the observed response and remedial status in each plume area going forward. Additional aquifer parameters including methane, ethene, and ethane are periodically analyzed to evaluate indicator compound breakdown and redox-sensitivity. In addition, volatile fatty acids (VFA) will also be tested periodically to evaluate substrate distribution and lifetime duration of the product. These samples will be collected in select monitoring wells representative of each plume to monitor the presence of residual CAP 18<sup>TM</sup> in the aquifer and to provide additional monitoring of aquifer conditions. Future monitoring of these constituents will be performed as needed to evaluate the natural attenuation process.

The groundwater pumped out of the wells during well development were placed in 55-gallon drums located at the Site for later disposal. In accordance with IDEM guidelines, the contents in each drum were then identified with a label describing them as non-hazardous materials.

## GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical testing results for this quarter are summarized in **Table 3** and presented on **Figure 2**. Four (4) out of the twenty-six (26) monitoring wells sampled this quarter (MMW-1S, MMW-P-01, MW0168S, and MMW-C-01) showed PCE concentrations exceeding the IDEM RISC Industrial Default Closure Level (IDEM RISC IDCL). Two (2) monitoring wells (MMW-P-02 and MMW-P-03S) demonstrated PCE concentrations exceeding the IDEM RISC Residential Default Closure Level (IDEM RISC RDCL) but below the IDCL. The historical groundwater results are included in **Table 4**. The historical indicator compounds trends in groundwater are presented in **Figure 3**.

One (1) of the monitoring wells (MMW-P-01) showed TCE concentrations exceeding the IDEM RISC IDCL, with three (3) monitoring wells (MMW-1S, MMW-P-03S, and MW-168S) exhibiting levels exceeding the RDCL, but below the IDCL.

Three (3) monitoring wells (MMW-9S, MMW-P-01, and MMW-P-10D) showed cis-1,2-DCE concentrations exceeding the IDEM RISC IDCL. Thirteen (13) monitoring wells (MMW-1S, MMW-8S, MMW-10S, MMW-11S, MMW-11D, MMW-13D, MMW-14D, MMW-P-03S, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-10S, and MW-168S) exhibited cis-1,2-DCE concentrations exceeding the RDCL, but below the IDCL.

Twenty-one (21) monitoring wells (MMW-1S, MMW-8S, MMW-9S, MMW-10S, MMW-11D, MMW-12S, MMW-13D, MMW14D, MMW-P-01, MMW-P-02, MMW-P-03S, MMW-P-03D, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-09D, MMW-P-10S, MMW-P-10D, MW-168S, MW-168D, and MMW-C-01) showed vinyl chloride concentrations exceeding the IDEM RISC IDCL. One (1) monitoring well (MMW-11S) exhibited a vinyl chloride concentration at or exceeding the RDCL, but below the IDCL.

The recently installed deep monitoring wells MMW-13D and MMW-14D exhibited significant cis-1,2-DCE and vinyl exceedances above the IDCLs during this quarter (**Figures 3 and 4**).

Since these wells have been purposefully located upgradient of *Source Areas B* and *C*, the impacts observed in these areas demonstrate groundwater impacts that are attributable to other upgradient, off-site sources and not to Michigan Plaza. As seen on **Figures 2, 3 and 4**, the indicator compound concentrations at these deep, upgradient wells can be considered as “background levels” defined as the concentration of contaminants from the Genuine source coming into the deeper aquifer in this area. These indicator compound levels aid in discerning between the Michigan Plaza source impacts and the Genuine Site impacts, and will ultimately be used to evaluate the target cleanup levels for the deeper aquifer at the Site.

## IN-SITU BIOREMEDIATION PROGRESS

Based upon the 1) the extent and severity of the indicator compound concentrations and trends, 2) site-specific operational constraints and uses, 3) geochemical and physical characteristics of the aquifer, and 4) economic factors, in-situ bioremediation with CAP18<sup>TM</sup> (an enhanced, food-grade vegetable oil product), followed by Monitored Natural Attenuation (MNA) is the selected remediation technology for the Site for treating groundwater, as detailed in the RWP. The initial CAP18<sup>TM</sup> injection was performed in all the three source areas in August 2007 using a direct push Geoprobe system. Locations and spacing of the injection points were designed to address the sewer line related *Chemical Source Areas* and provide injection locations in each *Chemical Source Area* that upon migration downgradient in the direction of groundwater flow, are expected to remediate the most significant groundwater impacts. A booster CAP-18ME injection was performed in February 2009 to aggressively treat some areas where the chemical concentrations have begun to stabilize or are decreasing at a slow rate. During this quarter, no additional CAP-18ME injections have been performed.

### ***Indicator Chemical Trends***

A group of monitoring wells from the sampling network is utilized to monitor dissolved indicator compound concentration trends over time at various locations within the heart of the three *Chemical Source Areas*. Graphs of historical PCE, TCE, cis-1,2-DCE and vinyl chloride concentrations are developed for the following monitoring wells:

***Source Area A:*** MMW-P-03D

***Source Area B:*** MMW-P-01, MMW-P-07, MMW-P-08, and MMW-8S

***Source Area C:*** MMW-1S, MMW-9S, and MMW-10S

**Figures 3 and 4** illustrate the changes in the chlorinated solvents concentrations demonstrating reductive dechlorination as a result of the CAP-18 remediation implementation. To illustrate the effect of the CAP-18 injection on dissolved chlorinated concentrations, injection dates are included on the graphs.

PCE and cis-1,2-DCE impacts in ***Source Area A*** (MMW-P-03D) appear to have a decreasing trend, and vinyl chloride demonstrated an increasing trend after the second round of CAP-18 injection in February 2009. This is indicative of reductive dechlorination (i.e., further breakdown

of parent compounds) in *Source Area A*. This is indicative of continued reductive dechlorination in this area (indicating further breakdown of parent compounds) in *Source Area A*.

PCE impacts in the ***Source Area B*** (MMW-P-01, MMW-8S, and MMW-P-07) have significantly decreased, with corresponding decreases in the cis-1,2-DCE and vinyl chloride concentrations (with the exception of MMW-P-08 where the VC concentrations demonstrated an increasing trend) after the second round of CAP-18 injection. This is indicative of reductive dechlorination in *Source Area B*. There was a slight increase in the PCE concentration in monitoring well MMW-8S immediately after injection during the fourth quarter of 2007, followed by a decreasing trend in the first quarter of 2008, accompanied by a spike in cis-1,2-DCE and vinyl chloride concentrations. The PCE concentration has significantly decreased in monitoring well MW-8S since then, although it was slightly higher immediately after injection. A spike in cis-1,2-DCE and vinyl chloride concentrations occurred after the first injection, following by decreasing cis-1,2-DCE trends and stable vinyl chloride trends up to the 2<sup>nd</sup> injection event. The analytical results are attached in **Appendix A**.

PCE impacts in the ***Source Area C*** (MMW-1S, MMW-10S, and MMW-9S) appear to have a decreasing trend this quarter, and vinyl chloride demonstrated a decreasing trend in all three wells for this quarter. Cis-1,2-DCE concentrations were slightly increasing this quarter in MMW-1S, MMW-9S and MMW-10S. This is indicative of continued reductive dechlorination in *Source Area C*.

Thus, an overall decreasing trend in PCE and TCE concentrations (in some areas achieving nondetectable concentrations), and an increase in the daughter product concentrations (indicating breakdown of parent compounds via reductive dechlorination) has occurred significantly since the CAP-18 injection in the *Source Areas A, B and C* in August 2007.

This second round of CAP-18<sup>ME</sup> injection (completed in February 2009) was completed to allow for PCE concentrations to be reduced more effectively in areas that contain higher levels of chlorinated organics. This booster injection was conducted in *Source Area C* (west - southwest of Apartment Building No. 1, *Source Area B* (plaza parking lot), and *Source Area A* (beneath the plaza building during soil sampling activities) to further remediate the plumes. Changes in concentrations resulting from this second round of injections will be able to be better evaluated over the next several quarters.

## INDOOR AIR MITIGATION SYSTEMS PERFORMANCE

Four sub-floor slab depressurization units were installed by *Air Quality Control (AQC)* under the oversight of MUNDELL in September 2006. Three additional sub-floor slab depressurization units were installed by AQC under the oversight of MUNDELL on March 19 and 26, 2008. Unit/blowers were installed in the following spaces at Michigan Plaza: 1) the Village Pantry (B1), 2) the former Handicap Space (B2), 3) the Mexican Store (B3), and 4) the Laundromat (B4). The systems installed at the Michigan Apartments are: Building No. 1,

Basement Apartment 101 (B5), Building No. 6, Basement Apartment 602 (B6), and Building No. 10, Basement Apartment 1001 (B7). The system locations are illustrated in **Figure 5**.

Since the time of installation, system stack air samples were collected weekly for a few weeks followed by bi-weekly sampling for a month, monthly for a quarter and then on a quarterly basis thereafter. PID readings have also been concurrently measured in each of the stacks. The historical PCE concentration trends and cumulative pounds of PCE and total contaminants removed by each of the systems (B1 through B7) are summarized in **Figures 6 through 14**. The associated calculations are provided in **Appendix B**.

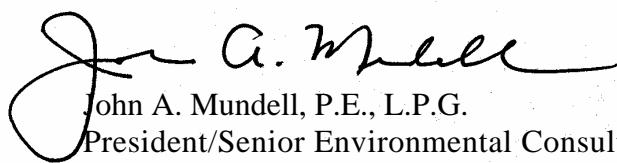
We appreciate the opportunity to update IDEM on the progress of remedial activities and monitoring at the Site. If you have any questions, please don't hesitate to contact us at (317) 630-9060 or via email ([jmundell@MundellAssociates.com](mailto:jmundell@MundellAssociates.com); [llothe@MundellAssociates.com](mailto:llothe@MundellAssociates.com)).

Sincerely,

**MUNDELL & ASSOCIATES, INC.**



Leena A. Lothe  
Project Environmental Engineer



John A. Mundell, P.E., L.P.G.  
President/Senior Environmental Consultant

Attachments:    Tables  
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cc:        Mr. Stephen Evanoff, AIMCO

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## APPENDICES

Appendix A. Lab Analytical Results

Appendix B. Air Mitigation Systems: Pounds of Contaminants Removed

## **TABLES**

**Table 1**  
**Tabulated Water Level Measurements**  
**Quarter 3 (2009)**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No. M01046**

Monitoring Well	Date of Water Level	Top of Casing Elevation (feet MSL)	Total Depth (feet)	Depth To Water (feet)	Groundwater Elevation (feet MSL)
<b>On-Site Monitoring Wells</b>					
MMW-P-01	8/5/2009	714.903	28	17.91	696.99
MMW-P-02	8/5/2009	715.686	30	18.85	696.84
MMW-P-03S	8/5/2009	715.6	28	18.70	696.90
MMW-P-03D	8/5/2009	715.582	35	18.71	696.87
MMW-P-04*	8/5/2009	715.492	28	18.90	696.51
MMW-P-05	8/5/2009	715.17	28	18.21	696.96
MMW-P-06	8/5/2009	715.721	28	19.81	695.91
MMW-P-07	8/5/2009	714.471	28	17.40	697.07
MMW-P-08	8/5/2009	714.142	28	17.03	697.11
MMW-P-10S	8/5/2009	713.941	28	16.65	697.29
MMW-P-10D	8/5/2009	714.05	38	16.90	697.15
<b>Off-Site Monitoring Well (Cemetery ROW)</b>					
MMW-P-09D	8/5/2009	714.394	45	18.95	695.44
MMW-P-09S	8/5/2009	714.447	28	19.05	695.40
<b>Off-Site Monitoring Wells (Keramida)</b>					
MW-168S	8/7/2009	714.79	22	16.74	698.05
MW-168D	8/7/2009	714.71	31	16.69	698.02
<b>Off-Site Monitoring Wells (Michigan Meadows Apartments)</b>					
MMW-1S	8/5/2009	712.54	20	14.99	697.55
MMW-8S	8/5/2009	713.81	24	15.97	697.84
MMW-9S	8/5/2009	713.249	25	15.98	697.27
MMW-10S	8/5/2009	712.302	25	15.50	696.81
MMW-11S	8/5/2009	712.818	24	15.09	697.73
MMW-11D	8/5/2009	712.988	33	14.89	698.10
MMW-12S	8/5/2009	711.988	24	14.19	697.80
MMW-13D	8/5/2009	712.884	50	14.85	698.03
MMW-14D	8/5/2009	711.77	50	13.92	697.85
<b>Off-Site Monitoring Well (Cemetery ROW)</b>					
MW 167S	8/5/2009	716.25	22	17.70	698.55
MW 167D	8/5/2009	716.25	33	17.83	698.42
MW 168S	8/5/2009	714.79	22	16.74	698.05
MW 168D	8/5/2009	714.71	31	16.69	698.02
MW 169S	8/5/2009	715.95	25	19.13	696.82
MW 169D	8/5/2009	715.23	37	19.15	696.08
MW 170S	8/5/2009	717.40	27	20.05	697.35
MW 170D	8/5/2009	717.34	39	19.95	697.39
MW 171S	8/5/2009	711.83	22	14.79	697.04
MW 171D	8/5/2009	711.88	49	15.22	696.66
<b>Off-Site Monitoring Well (Cemetery ROW)</b>					
MMW-C-01	8/5/2009	715.272	28	18.53	696.74
MMW-C-02	8/5/2009	714.22	28	18.14	696.08

\* Corrected for the presence of 3.77 feet of CAP-18™ (density of 0.96) vegetable oil in well.

**Table 2**  
**Monitoring Well Construction Summary**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No. M01046**

<b>Monitoring Well</b>	<b>Date Installed</b>	<b>Date of Water Level</b>	<b>*Top of Casing Elevation (feet MSL)</b>	<b>Total Depth (feet)</b>	<b>Screened Interval (feet)</b>			<b>Depth To Water (feet)</b>	<b>Groundwater Elevation (feet MSL)</b>
MMW-P-01	09/28/05	9/19/07	715.79	28.00	18.00	-	28.00	19.69	696.10
MMW-P-02	09/27/05	9/19/07	716.70	30.00	20.00	-	30.00	20.90	695.80
MMW-P-03S	09/26/05	9/19/07	716.55	28.00	18.00	-	28.00	20.79	695.76
MMW-P-03D	09/27/05	9/19/07	716.45	35.00	25.00	-	35.00	20.63	695.82
MMW-P-04	09/26/05	9/19/07	716.27	28.00	18.00	-	28.00	20.49	695.78
MMW-P-05	09/26/05	9/19/07	716.12	28.00	18.00	-	28.00	20.14	695.98
MMW-P-06	09/28/05	9/19/07	716.50	28.00	18.00	-	28.00	20.57	695.93
MMW-P-07	01/11/07	9/19/07	715.30	28.00	18.00	-	28.00	18.84	696.46
MMW-P-08	01/11/07	9/19/07	715.22	28.00	18.00	-	28.00	18.61	696.61
MMW-P-09S	01/29/07	9/19/07	715.36	28.00	18.00	-	28.00	20.17	695.19
MMW-P-09D	05/31/07	9/19/07	715.21	45.00	35.00	-	45.00	20.35	694.86
MMW-P-10S	06/01/07	9/19/07	714.59	28.00	18.00	-	28.00	18.30	696.29
MMW-P-10D	06/01/07	9/19/07	714.98	38.00	28.00	-	38.00	18.69	696.29

Note: The top of casing elevation for each well was determined assuming a surveyed top of casing elevation of 712.54 ft elevation given in the Keramida Phase II Investigation Report dated March 2002 for well MW-165S (located along Michigan Meadows Apartm

**Table 2a**  
**Monitoring Well Construction Summary**  
**Michigan Apartments**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No. M01046**

Monitoring Well	Date Installed	Date of Water Level	*Top of Casing Elevation (feet MSL)	Total Depth (feet)	Screened Interval (feet)			Depth To Water (feet)	Groundwater Elevation (feet MSL)
MMW-1S	8/20/04	9/19/07	713.66	20.00	10.00	-	20.00	16.36	697.30
MMW-8S	1/11/07	9/19/07	714.75	24.00	14.00	-	24.00	17.41	697.34
MMW-9S	1/12/07	9/19/07	714.09	25.00	15.00	-	25.00	17.45	696.64
MMW-10S	1/12/07	9/19/07	713.23	25.00	15.00	-	25.00	16.17	697.06
MMW-11D	5/31/07	9/19/07	713.69	33.00	23.00	-	33.00	16.43	697.26
MMW-11S	11/26/08	NM	713.64	24.00	14.00	-	24.00	NM	NA
MMW-12S	11/26/08	NM	712.82	28.00	18.00	-	28.00	NM	NA
MMW-13D	11/21/08	NM	713.53	50.00	35.00	-	50.00	NM	NA
MMW-14D	12/10/08	NM	712.61	50.00	40.00	-	50.00	NM	NA

Note: The top of casing elevation for each well was determined assuming a surveyed top of casing elevation of 712.54 ft elevation given in the Keramida Phase II Investigation Report dated March 2002 for well MW-165S (located along Michigan Meadows Apartm

NM: Not Measured

NA: Not Available

**Table 3**  
**Monitoring Well Groundwater Analytical Results**  
**Quarter 3 (2009)**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
<b>Monitoring Wells (Apts)</b>							
MMW-1S	8/5/2009	195	22.9	71.3	<5.0	<5.0	9.3
MMW-8S	8/5/2009	<5.0	<5.0	83.8	<5.0	<5.0	261
MMW-9S	8/5/2009	<5.0	<5.0	5,010	64.2	<5.0	1,110
MMW-10S	8/5/2009	<5.0	<5.0	224	5.5	<5.0	156
MMW-11S	8/5/2009	<5.0	<5.0	80.7	5.5	<5.0	3.1
MMW-11D	8/5/2009	<5.0	<5.0	485	22.6	<5.0	15.3
MMW-12S	8/5/2009	<5.0	<5.0	47.3	<5.0	<5.0	15.2
MMW-13D	8/5/2009	<5.0	<5.0	672	<5.0	<5.0	59.2
MMW-14D	8/5/2009	<5.0	<5.0	589	10.9	<5.0	79.1
<b>Monitoring Wells (Plaza)</b>							
MMW-P-01	8/6/2009	97.4	37.0J	12,200	<50.0	<50.0	3,730
MMW-P-02	8/6/2009	5.1	<5.0	55.8	<5.0	<5.0	56.2
MMW-P-03S	8/6/2009	30.6	8.2	573	25	<5.0	843
MMW-P-03D	8/6/2009	<5.0	<5.0	16.7	<5.0	<5.0	248
MMW-P-04	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
MMW-P-05	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
MMW-P-06	8/6/2009	<5.0	<5.0	136	14.3	<5.0	301
MMW-P-07	8/6/2009	<5.0	<5.0	48.7	<5.0	<5.0	787
MMW-P-08	8/6/2009	<125	<125	601	<50.	<50.	8,960
MMW-P-09S	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-09D	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	80.8
MMW-P-10S	8/6/2009	<5.0	<5.0	158	16.1	<5.0	395
MMW-P-10D	8/6/2009	<5.0	<5.0	2,520	5.1	<5.0	3,400
<b>Keramida Monitoring Wells (Off-site)</b>							
MW-168S	8/7/2009	62.6	10.2	118	<5.0	NS	9.9
MW-168D	8/7/2009	<5.0	<5.0	<5.0	<5.0	<5.0	36.2
<b>Floral Park Monitoring Wells (Off-site)</b>							
MMW-C-01	8/6/2009	84.8	<5.0	66.9	<5.0	<5.0	35.2
MMW-C-02	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
IDE� RISC Default Industrial Cleanup Level		55	31	1,000	2,000	1,000	4
IDE� RISC Default Residential Cleanup Level		5	5	70	100	80	2

Note:

All Values Over IDE� RISC Default Industrial Cleanup Level in RED

All Values Over IDE� RISC Default Residential Cleanup Level in BLUE

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

**Table 4**  
**Historical Monitoring Well Groundwater Analytical and Geochemical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
<b>Monitoring Wells (Apts)</b>							
MMW-1S	9/10/2004	3.1 J	<5.0	<5.0	<5.0	<5.0	4.1
	3/15/2005	150	10	<5.0	<5.0	<5.0	<2.0
	11/9/2005	130	8.3	<5.0	<5.0	<5.0	8.9
	9/5/2006	200	13	<5.0	<5.0	<5.0	4.6
	2/22/2007	220	14.9	<5.0	<5.0	<5.0	<2.0
	6/14/2007	240	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	362	10.5	<5.0	<5.0	31.6	<2.0
	12/13/2007	330	8.1	<5.0	<5.0	27	<2.0
	3/21/2008	280	14	<5.0	<5.0	<5.0	<2.0
	6/6/2008	277	13.2	<5.0	<5.0	<5.0	<2.0
	9/11/2008	288	14.7	<5.0	<5.0	<5.0	<2.0
	11/20/2008	223	45.5	169	<5.0	<5.0	14.5
	3/16/2009	199	11.3	<5.0	<5.0	<5.0	<2.0
	6/16/2009	237	13.4	<5.0	<5.0	<5.0	<2.0
	8/5/2009	195	22.9	71.3	<5.0	<5.0	9.3
MMW-2S	9/10/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/9/2005	<5.0	<5.0	<5.0	<5.0	<5.0	5.2
	9/5/2006	<5.0	<5.0	<5.0	<5.0	<5.0	5.2
	6/2/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/15/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-3S	8/26/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	5.2	<5.0	<5.0	<5.0	<2.0
	11/9/2005	<5.0	28	5.4	<5.0	<5.0	<2.0
	9/5/2006	<5.0	23	7.4	<5.0	<5.0	<2.0
	6/2/2008	<5.0	20.2	7.9	<5.0	<5.0	2.8
	6/15/2009	<5.0	15.3	11.7	<5.0	<5.0	3
MMW-4D	8/25/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	980	<5.0	<5.0	200
	11/10/2005	<5.0	<5.0	850	<5.0	<5.0	240
	9/5/2006	<5.0	<5.0	1,100	2.3J	<5.0	220
	6/2/2008	<5.0	<5.0	515	<5.0	<5.0	32.2
	6/15/2009	<5.0	<5.0	892	7	<5.0	142
MMW-5D	8/24/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	3400	13	<5.0	270
	11/10/2005	<5.0	<5.0	3900	19	<5.0	140
	9/5/2006	<50	<50	2500	<50	<5.0	170
	6/2/2008	<5.0	<5.0	1360	19.9	<5.0	207
	6/15/2009	<5.0	<5.0	1110	14.5	<5.0	242
MMW-6D	9/10/2004	<5.0	<5.0	540	<5.0	<5.0	400
	11/10/2005	<5.0	<5.0	750	<5.0	<5.0	700
	9/5/2006	<5.0	<5.0	300	<5.0	<5.0	440
	6/2/2008	<5.0	<5.0	65.5	<5.0	<5.0	242
	6/15/2009	<5.0	<5.0	8.6	<5.0	<5.0	111
MMW-7S	8/24/2004	<5.0	<5.0	28	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	8.5	<5.0	<5.0	<2.0
	11/9/2005	<5.0	<5.0	9.5	<5.0	<5.0	<2.0
	9/5/2006	<5.0	<5.0	5.8	<5.0	<5.0	4.5
	6/2/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/15/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
IDEML RISC Default Industrial Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level - 2006		5	5	70	100	80	2

Note:

All Values Over IDEML RISC Default Industrial Cleanup Level in **RED**

All Values Over IDEML RISC Default Residential Cleanup Level in **BLUE**

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

Green Shading indicates areas that appear to be undergoing reductive dechlorination due to CAP-18 Injections

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**Table 4**  
**Historical Monitoring Well Groundwater Analytical and Geochemical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MMW-8S	2/22/2007	114	<5.0	289	13.8	<5.0	40.6
	6/14/2007	15.9	<5.0	364	9.5	<5.0	82.1
	9/19/2007	<5.0	<5.0	778	24.6	<5.0	145
	12/13/2007	7.7	<5.0	1,000	7.4	<5.0	586
	3/20/2008	<5.0	<5.0	470	<5.0	<5.0	330
	6/6/2008	<5.0	<5.0	336	<5.0	<5.0	509
	9/10/2008	<5.0	<5.0	275	<5.0	<5.0	322
	11/20/2008	<5.0	<5.0	123	<5.0	<5.0	584
	3/16/2009	<5.0	<5.0	95	<5.0	<5.0	348
	6/16/2009	<5.0	<5.0	94.3	6.1	<5.0	280
MMW-9S	8/5/2009	<5.0	<5.0	83.8	<5.0	<5.0	261
	2/22/2007	782	88.6	78.9	<5.0	<5.0	<2.0
	6/14/2007	858	85.7	65.3	<5.0	<5.0	<2.0
	9/20/2007	1,430	112	70.3	8.2	<5.0	<2.0
	12/12/2007	37.9 J	17.9 J	1,700	29.8 J	<50.0	<20.0
	3/21/2008	57	20	2,900	39	<5.0	16
	6/6/2008	52.9	28	1,540	38.2	<5.0	295
	9/10/2008	52.6	22.7	4,920	94.5	<5.0	167
	11/20/2008	<5.0	<5.0	5,820	90.2	<5.0	1,010
	3/16/2009	<50.0	<50.0	7,490	73.8	<50.0	1,800
MMW-10S	6/16/2009	44.5	24.9	4,810	64	<5.0	876
	8/5/2009	<5.0	<5.0	5,010	64.2	<5.0	1,110
	2/22/2007	49.6	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	77.6	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	66	<5.0	<5.0	<5.0	<5.0	<2.0
	12/12/2007	124	56	149	<5.0	<5.0	<2.0
	3/21/2008	440	12	8.1	<5.0	<5.0	12
	6/6/2008	541	62.1	218	<5.0	<5.0	30.4
	9/10/2008	6.9	<5.0	353	8.2	<5.0	<2.0
	11/20/2008	<5.0	<5.0	212	<5.0	<5.0	15.9
MMW-11S	3/16/2009	<5.0	<5.0	302	<5.0	<5.0	114
	6/16/2009	22.8	15.4	415	12	<5.0	81.4
	8/5/2009	<5.0	<5.0	224	5.5	<5.0	156
	6/14/2007	<5.0	<5.0	225	6.8	<5.0	18.6
	9/19/2007	<5.0	<5.0	442	21.1	<5.0	30.1
	12/13/2007	7.2	<5.0	920	27	<5.0	49
	3/20/2008	<5.0	<5.0	420	17	<5.0	4.9
	6/5/2008	<5.0	<5.0	623	23.1	<5.0	26.7
	9/10/2008	<5.0	<5.0	327	18.3	<5.0	9.9
	11/20/2008	<5.0	<5.0	554	23.9	<5.0	18.5
MMW-11D	3/16/2009	<5.0	<5.0	37.6	<5.0	<5.0	<2.0
	6/16/2009	<5.0	<5.0	253	17.9	<5.0	2.8
MMW-12S	8/5/2009	<5.0	<5.0	80.7	5.5	<5.0	3.1
	6/16/2009	<5.0	<5.0	25.3	6.7	<5.0	<2.0
MMW-13D	8/5/2009	<5.0	<5.0	485	22.6	<5.0	15.3
	6/16/2009	<5.0	<5.0	9.7	<5.0	<5.0	6.5
MMW-13D Low (44'-47')	8/5/2009	<5.0	<5.0	47.3	<5.0	<5.0	15.2
	6/16/2009	<5.0	<5.0	613	10.4	<5.0	17.3
MMW-13D Medium (29')	8/5/2009	<5.0	<5.0	578	12.1	<5.0	14.9
	6/16/2009	<5.0	<5.0	597	9.7	<5.0	21.1
MMW-13D High (17')	8/5/2009	<5.0	<5.0	648	15.6	<5.0	57.6
	6/16/2009	<5.0	<5.0	589	10.9	<5.0	79.1
IDEML RISC Default Industrial Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level - 2006		5	5	70	100	80	2

Note:

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All Values Over IDEML RISC Default Residential Cleanup Level in BLUE

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

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**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Monitoring Wells (Plaza)							
MMW-P-01	11/9/2005	33	210	160	9.6	<5.0	76
	2/22/2007	85.2	356	274	16.7	<5.0	28.7
	6/14/2007	111	368	350	10	<5.0	79.6
	9/20/2007	206	322	300	11.5	<5.0	127
	12/14/2007	230	320	240	7.1	<5.0	87
	3/21/2008	120	170	3,100	25	<5.0	42
	6/5/2008	22	31.5	3,660	68.6	<5.0	123
	9/11/2008	14.2	15.1	1,690	<5.0	<5.0	87.7
	11/19/2008	<5.0	<5.0	4,320	<5.0	<5.0	116
	3/17/2009	17.5	22.6	12,300	143	<5.0	3,290
	6/17/2009	<50.0	<50.0	4,020	63.9	<50.0	1,840
	8/6/2009	97.4	37.0J	12,200	<50.0	<50.0	3,730
MMW-P-02	11/8/2005	24	<5.0	87	7.3	<5.0	49
	2/22/2007	184	<5.0	39.4	<5.0	<5.0	27.4
	6/14/2007	17.1	<5.0	35	<5.0	<5.0	27.5
	9/19/2007	13.3	<5.0	66.3	5.6	<5.0	50.1
	12/13/2007	7.8	<5.0	69	<5.0	<5.0	53
	3/20/2008	19	<5.0	67	<5.0	<5.0	42
	6/5/2008	94.9	<5.0	44	<5.0	<5.0	46.4
	9/11/2008	17.5	<5.0	46.6	<5.0	<5.0	42
	11/19/2008	10.7	<5.0	75.4	<5.0	<5.0	69.5
	3/17/2009	23.4	<5.0	65.4	5.3	<5.0	68.4
	6/17/2009	5.1	<5.0	54.2	9.2	<5.0	80.6
	8/6/2009	5.1	<5.0	55.8	<5.0	<5.0	56.2
MMW-P-03S	11/9/2005	110	<5.0	97	9.6	<5.0	<2.0
	2/22/2007	397	<5.0	105	10	<5.0	<2.0
	6/14/2007	256	<5.0	96.4	9.2	<5.0	9.3
	9/20/2007	144	<5.0	131	15.8	<5.0	16
	12/13/2007	67	<5.0	88	5.3	<5.0	15
	3/20/2008	130	<5.0	84	7.3	<5.0	10
	6/5/2008	19.4	<5.0	380	14.9	<5.0	10.6
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	72.6
	11/19/2008	<5.0	6	494	<5.0	<5.0	40.8
	3/17/2009	7.5	<5.0	904	38.7	<5.0	283
	6/17/2009	<5.0	<5.0	332	22.3	<5.0	759
	8/6/2009	30.6	8.2	573	25	<5.0	843
MMW-P-03D	11/9/2005	22	<5.0	42	<5.0	<5.0	2
	2/22/2007	48.9	<5.0	57.8	<5.0	39	15.6
	6/14/2007	21.7	<5.0	74.9	<5.0	<5.0	34.5
	9/19/2007	14.3	<5.0	76.1	7.3	<5.0	36.6
	12/13/2007	11	<5.0	40	<5.0	<5.0	20
	3/20/2008	<5.0	<5.0	170	6	<5.0	18
	6/5/2008	<5.0	<5.0	150	7.4	<5.0	26
	9/11/2008	<5.0	<5.0	95.7	6.4	<5.0	<2
	11/19/2008	<5.0	<5.0	80.6	<5.0	<5.0	36.9
	3/17/2009	<5.0	<5.0	65.2	<5.0	<5.0	69.8
	6/17/2009	<5.0	<5.0	14.9	5.9	<5.0	137
	8/6/2009	<5.0	<5.0	16.7	<5.0	<5.0	248
MMW-P-04	11/9/2005	180	<5.0	<5.0	<5.0	<5.0	<2.0
	2/22/2007	315	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	268	<5.0	<5.0	<5.0	<5.0	<2.0
	9/20/2007	214	<5.0	<5.0	<5.0	<5.0	<2.0
	12/13/2007	62	<5.0	<5.0	<5.0	<5.0	<2.0
	3/20/2008	120	<5.0	<5.0	<5.0	<5.0	<2.0
	6/6/2008	154	6	59.7	<5.0	<5.0	<2.0
	9/11/2008	31.9	<5.0	360	7.1	<5.0	<2.0
	11/19/2008	45	<5.0	248	<5.0	<5.0	<2.0
	3/18/2009	19.4	5.4	304	10.8	<5.0	<2.0
	6/17/2009	35.3	5.4	827	22	<5.0	2
	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
IDEMLISC Default Industrial Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
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**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MMW-P-05	11/8/2005	<5.0	<5.0	6.2	<5.0	<5.0	<2.0
	2/22/2007	23.7	<5.0	9.1	<5.0	<5.0	<2.0
	6/14/2007	<5.0	<5.0	18.8	<5.0	<5.0	<2.0
	9/19/2007	<5.0	<5.0	18.8	<5.0	<5.0	<2.0
	12/14/2007	<5.0	<5.0	14.8	<5.0	<5.0	<2.0
	3/20/2008	<5.0	<5.0	8.1	<5.0	<5.0	<2.0
	6/5/2008	<5.0	<5.0	15.6	<5.0	<5.0	<2.0
	9/11/2008	<5.0	<5.0	16.7	<5.0	<5.0	<2.0
	11/19/2008	<5.0	<5.0	22.1	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	13.7	<5.0	<5.0	<2.0
	6/17/2009	<5.0	<5.0	10.9	6.6	<5.0	<2.0
	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
MMW-P-06	11/8/2005	<5.0	<5.0	200	24	<5.0	21
	2/22/2007	<5.0	<5.0	158	19.2	<5.0	<2.0
	6/14/2007	<5.0	<5.0	214	22.7	<5.0	13.3
	9/19/2007	<5.0	<5.0	283	38.2	<5.0	26.1
	12/14/2007	<5.0	<5.0	260	40	<5.0	31
	3/20/2008	<5.0	<5.0	250	31	<5.0	26
	6/5/2008	<5.0	<5.0	265	30.9	<5.0	40.1
	9/11/2008	<5.0	<5.0	271	33.3	<5.0	<2.0
	11/19/2008	<5.0	<5.0	292	<5.0	<5.0	61.4
	3/17/2009	<5.0	<5.0	292	35.3	<5.0	<2.0
	6/17/2009	<5.0	<5.0	145	22.2	<5.0	90.6
	8/6/2009	<5.0	<5.0	136	14.3	<5.0	301
MMW-P-07	2/22/2007	3,060	81.5	82	8.8	<5.0	<2.0
	6/14/2007	2,850	90	82.5	<50.0	<50.0	<20.0
	9/20/2007	5,200	109	121	16.1	<5.0	2
	12/13/2007	1,440	157	930	8.8	7.4	80
	3/21/2008	31	7.6	1,700	27	<5.0	110
	6/5/2008	<5.0	<5.0	938	15.6	<5.0	466
	9/11/2008	<5.0	<5.0	1,870	55.2	<5.0	1,620
	11/19/2008	<5.0	<5.0	797	<5.0	<5.0	749
	3/17/2009	<5.0	<5.0	361	17.7	<5.0	1,830
	6/17/2009	<5.0	<5.0	87.1	9.4	<5.0	1,130
	8/6/2009	<5.0	<5.0	48.7	<5.0	<5.0	787
MMW-P-08	2/22/2007	6,280	281	240	26.7	<5.0	<2.0
	6/14/2007	6,440	310	169	<50.0	<50.0	<20.0
	9/20/2007	9,780	494	201	25.3	<5.0	6.5
	12/14/2007	390	210	5,800	<50.0	<50.0	<20.0
	3/21/2008	6.7	11	6,500	130	<5.0	55
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	562
	9/11/2008	5.8	5	18,300	686	<50.0	4,740
	11/19/2008	<50.0	<50.0	5,690	91.4	<50.0	13,000
	3/17/2009	<5.0	<5.0	1,130	47.1	<5.0	5,680
	6/17/2009	<125	<125	356	145	<5.0	7,200
	8/6/2009	<125	<125	601	<50.	<50.	8,960
MMW-P-09S	2/22/2007	10.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/19/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
IDEML RISC Default Industrial Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level - 2006		5	5	70	100	80	2

Note:

All Values Over IDEML RISC Default Industrial Cleanup Level in RED

All Values Over IDEML RISC Default Residential Cleanup Level in BLUE

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

Green Shading indicates areas that appear to be undergoing reductive dechlorination due to CAP-18 Injections

"J" designation indicates concentration was estimated due to high concentration of one parameter requiring dilution on other parameter quantitations

"-" indicates geochemical parameter was not collected, "NV" indicates data was not valid due to equipment error

**Table 4**  
**Historical Monitoring Well Groundwater Analytical and Geochemical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MMW-P-09D	6/14/2007	<5.0	<5.0	<5.0	<5.0	<5.0	46.2
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	83.1
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	71
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	100
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	72.6
	11/19/2008	<5.0	<5.0	<5.0	<5.0	<5.0	97.2
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	85.1
	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	73.5
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	80.8
MMW-P-10S	6/14/2007	36.1	36.3	61.6	6.9	<5.0	<2.0
	7/6/2007	87.9	54.9	92.1	10.2	<5.0	<2.0
	9/19/2007	192	82.6	126	14.4	<5.0	<2.0
	12/14/2007	71	<5.0	<5.0	<5.0	<5.0	2.4
	3/20/2008	26.8	19.2	250	12.2	<5.0	<2.0
	6/5/2008	15	9.7	537	16	<5.0	114
	9/11/2008	74.8	36.5	1,650	74	<5.0	27.7
	11/19/2008	78.6	28	1,510	<5.0	<5.0	22.3
	3/17/2009	11.9	8.6	1,160	71.5	<5.0	<2.0
	6/17/2009	<5.0	<5.0	331	20.5	<5.0	63.9
MMW-P-10D	8/6/2009	<5.0	<5.0	158	16.1	<5.0	395
	6/14/2007	<5.0	10.6	481	7.7	<5.0	98.7
	7/6/2007	<5.0	<5.0	498	9	<5.0	118
	9/19/2007	<5.0	<5.0	350	<5.0	<5.0	76.1
	12/14/2007	<5.0	<5.0	270	<5.0	<5.0	77
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3
	6/5/2008	<5.0	<5.0	508	<5.0	<5.0	267
	9/11/2008	<5.0	<5.0	435	<5.0	<5.0	288
	11/19/2008	<5.0	<5.0	3,390	<5.0	<5.0	5,030
	3/17/2009	<5.0	<5.0	4,860	12.9	<5.0	2,500
IDEM RISC Default Industrial Cleanup Level - 2006	<5.0	<5.0	3,710	9.6	<5.0	9,070	
	8/6/2009	<5.0	<5.0	2,520	5.1	<5.0	3,400
IDEM RISC Default Residential Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
		5	5	70	100	80	2

Note:

All Values Over IDEM RISC Default Industrial Cleanup Level in **RED**

All Values Over IDEM RISC Default Residential Cleanup Level in **BLUE**

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

Green Shading indicates areas that appear to be undergoing reductive dechlorination due to CAP-18 Injections

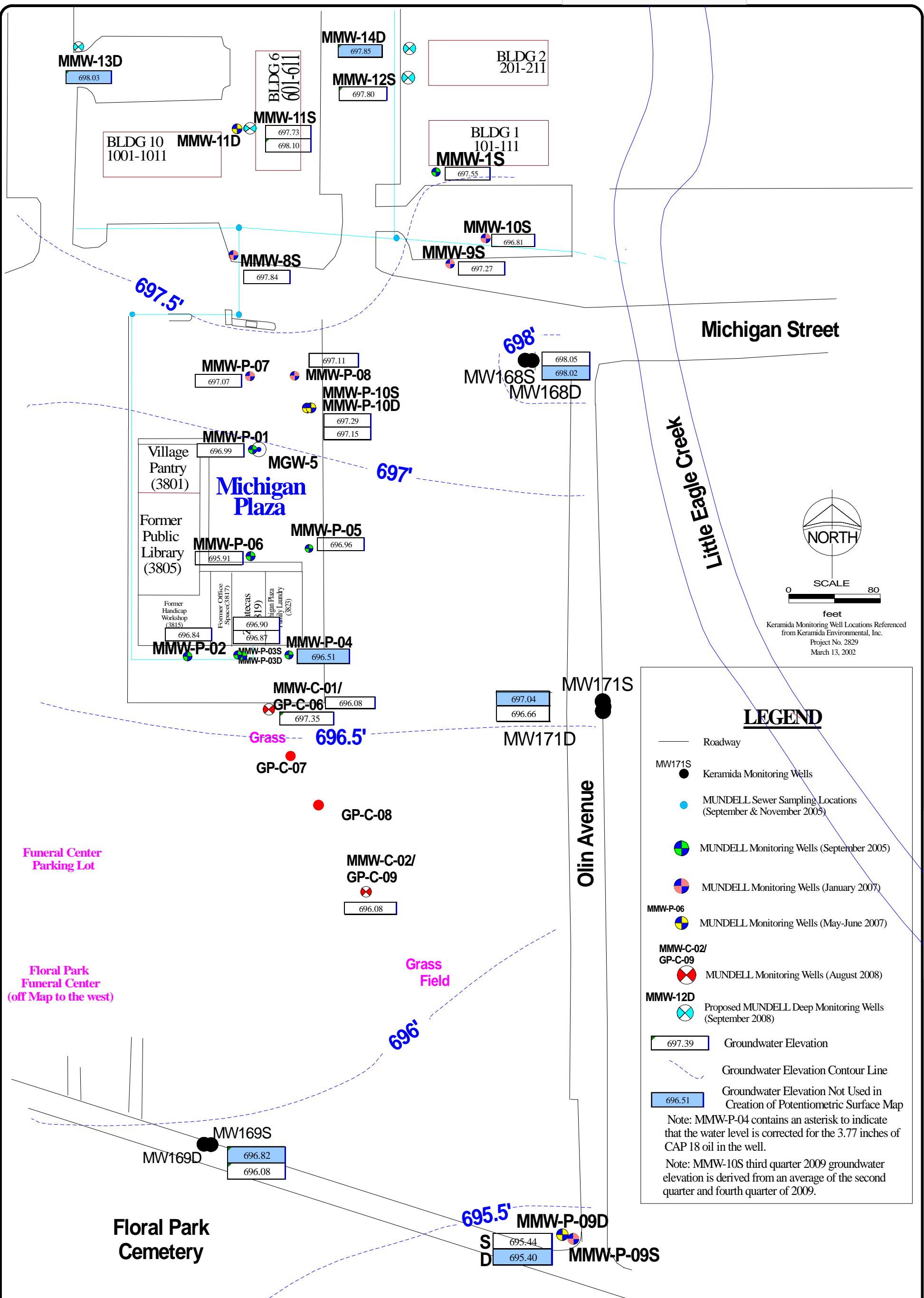
"J" designation indicates concentration was estimated due to high concentration of one parameter requiring dilution on other parameter quantitations

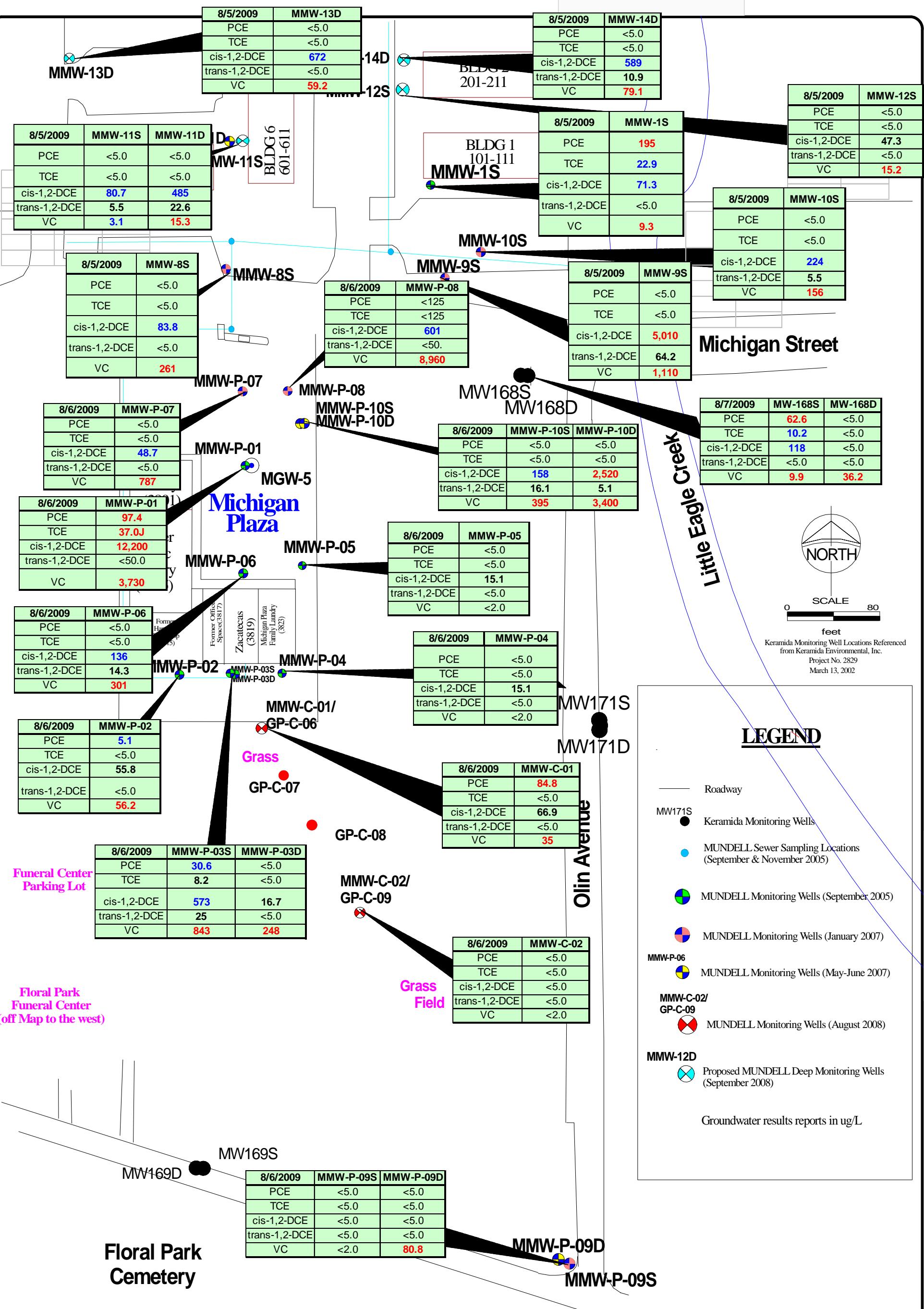
"-" indicates geochemical parameter was not collected, "NV" indicates data was not valid due to equipment error

**Table 4**  
**Historical Monitoring Well Groundwater Analytical and Geochemical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Job No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
<b>Keramida Monitoring Wells (Off-site)</b>							
MW-167S	11/7/2005	<5.0	<5.0	<5.0	<5.0	<5.0	14
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MW167D	11/7/2005	<5.0	<5.0	750	<5.0	<5.0	110
	6/5/2008	<5.0	<5.0	616	28	<5.0	43.8
	6/17/2009	<5.0	<5.0	612	22.1	<5.0	23.8
MW-168S	11/7/2005	280	16	53	<5.0	<5.0	3
	2/21/2007	30.1	8.8	155	<5.0	<5.0	29.6
	6/14/2007	<5.0	<5.0	40.8	<5.0	<5.0	34
	9/19/2007	32.6	8	82.4	<5.0	<5.0	3.5
	12/13/2007	52	14	78	<5.0	<5.0	4.1
	3/20/2008	92	12	46	<5.0	<5.0	4.2
	6/5/2008	80.4	10.1	41.1	<5.0	<5.0	3.6
	9/11/2008	68.5	10.8	66.9	<5.0	<5.0	5.5
	8/7/2009	62.6	10.2	118	<5.0	NS	9.9
	11/7/2005	<5.0	<5.0	6.8	<5.0	<5.0	49
MW-168D	2/21/2007	<5.0	<5.0	8.4	<5.0	<5.0	58.1
	6/14/2007	<5.0	<5.0	5.2	<5.0	<5.0	47.5
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	89.7
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	74
	3/20/2008	<5.0	<5.0	8	<5.0	<5.0	39
	6/5/2008	<5.0	<5.0	13.4	<5.0	<5.0	65.9
	9/11/2008	<5.0	<5.0	5.5	<5.0	<5.0	<2
	3/17/2009	<5.0	<5.0	16.5	<5.0	<5.0	<2.0
	6/18/2009	<5.0	<5.0	<5.0	<5.0	<5.0	14.5
	8/7/2009	<5.0	<5.0	<5.0	<5.0	<5.0	36.2
MW-169S	11/7/2005	<5.0	<5.0	<5.0	<5.0	NA	<2.0
MW-169D	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MW-169D	11/7/2005	<5.0	<5.0	<5.0	<5.0	NA	5.1
MW-169D	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	14.3
MW-170S	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	5.5
MW-170S	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MW-170D	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	230
MW-170D	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	174
MW-171S	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MW-171D	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3
MW-171D	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	2.2
<b>Floral Park Cemetery Wells (Off-site)</b>							
MMW-C-01	11/20/2008	15.7	8.3	296	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	508	7.3	<5.0	<2.0
	6/18/2009	23.2	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	84.8	<5.0	66.9	<5.0	<5.0	35.2
MMW-C-02	11/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/18/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<b>IDEML RISC Default Industrial Cleanup Level - 2006</b>		55	31	1,000	2,000	1,000	4
<b>IDEML RISC Default Residential Cleanup Level - 2006</b>		5	5	70	100	80	2

## **FIGURES**





**MUNDELL & ASSOCIATES, INC.**

Consulting Professionals for the Earth & Environment

110 South Downey Avenue  
 Indianapolis, Indiana 46219  
 317-630-9060, fax 317-630-9065

Project Number:  
 M01046

Drawing File:

Date Prepared:

3/24/09

Scale:

1"=80'

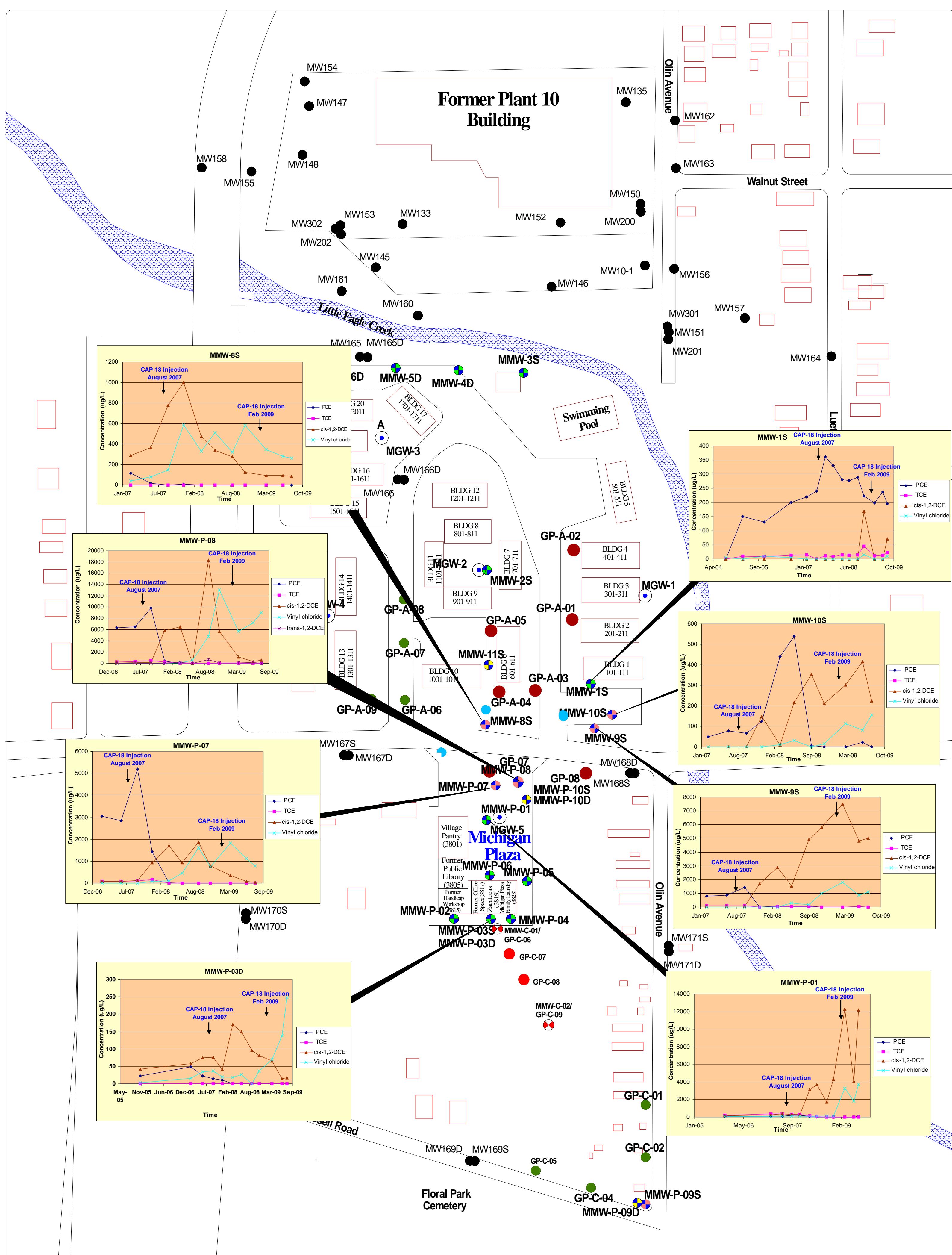
**GROUNDWATER ANALYTICAL RESULTS**

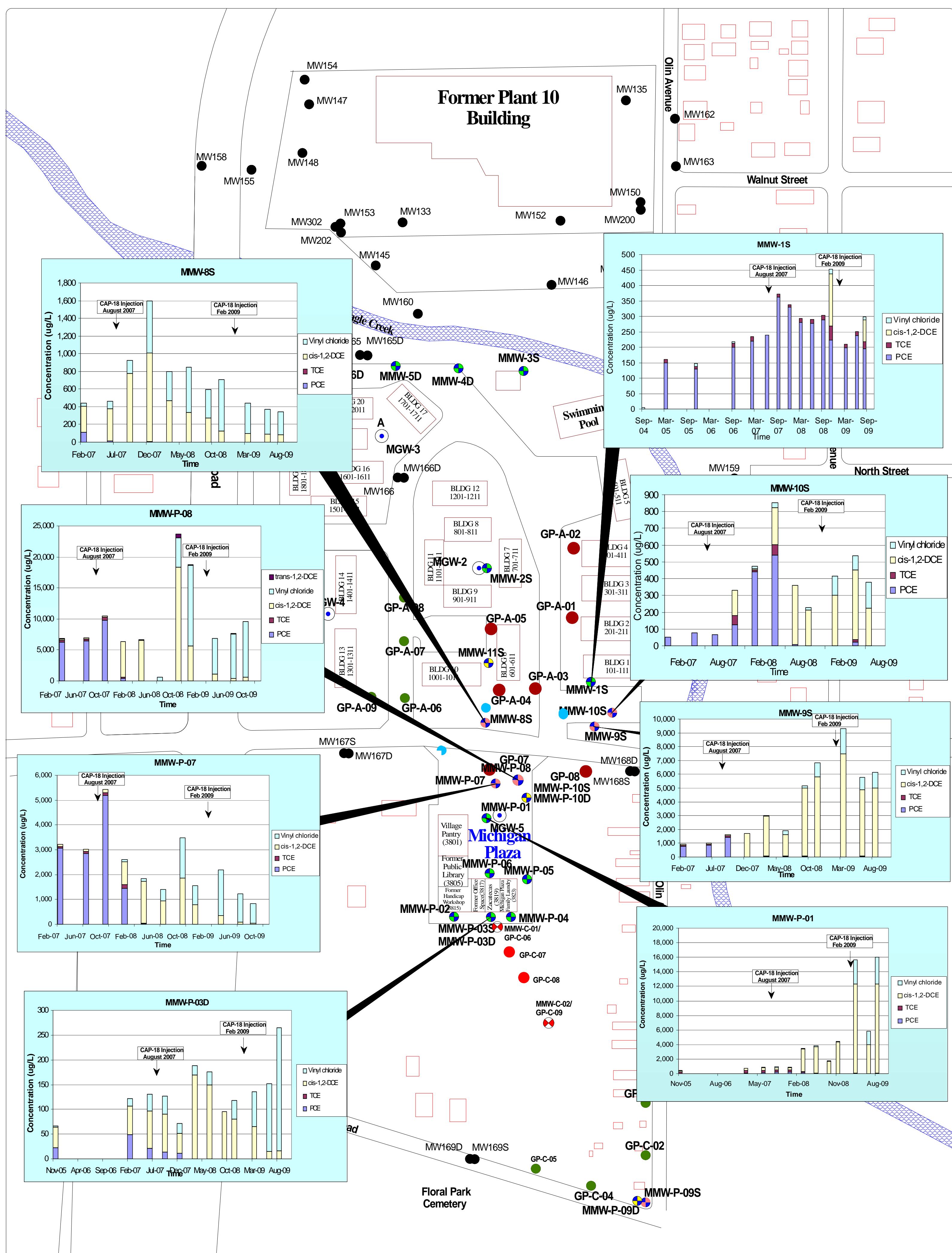
Third Quarter 2009

Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana

**FIGURE**

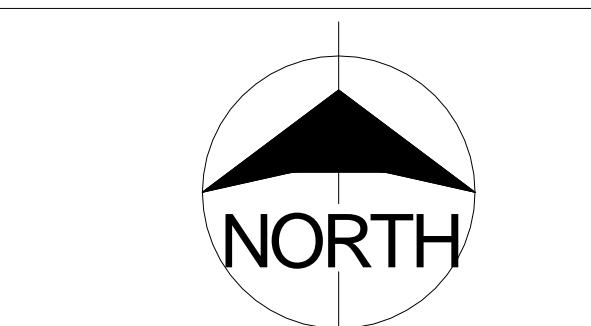
**2**





### LEGEND

- Mundell Test Pit (TP-3) Sampling Locations (April 2005)
- Sewer Excavation Sampling Locations (October 2007)
- Fence
- Sewer Line
- MWW-11S** MUNDELL Monitoring Wells (May-June 2007)
- MW160** Keramida Monitoring Wells
- SS-P-01** MUNDELL Sewer Sampling Locations/manholes (September & November 2005)
- GP-07** MUNDELL Soil Boring Locations (September 2005)
- MWW-P-06** MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- GP-C-04** MUNDELL Soil Boring Locations (January 2007)
- MWW-P-07** MUNDELL Monitoring Wells (January 2007)
- MWW-C-01** MUNDELL Monitoring Wells (July/August 2008)
- GP-C-06** MUNDELL Soil Boring Locations (July/August 2008)



Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.  
Project No. 2829  
March 13, 2002

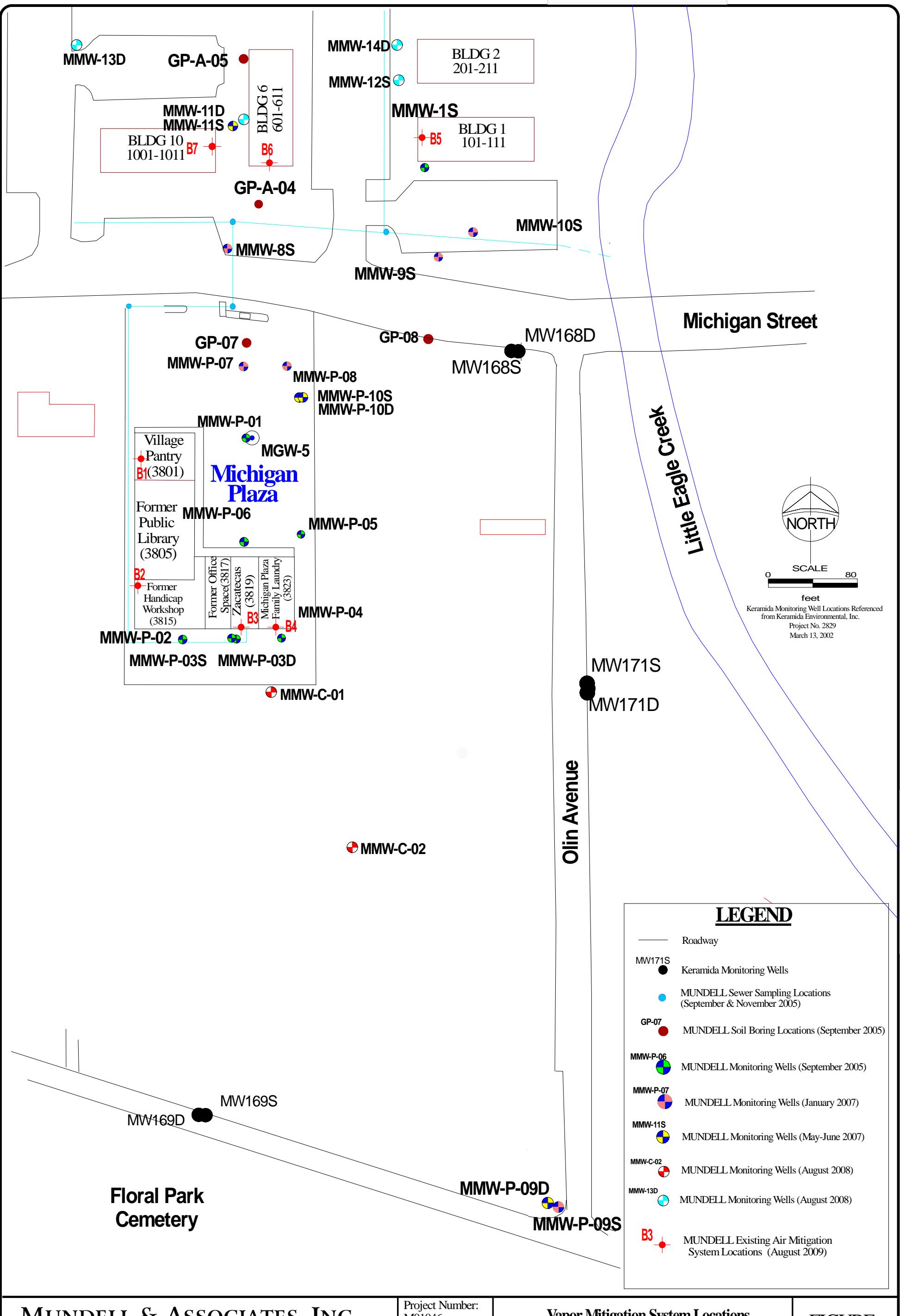
**MUNDELL & ASSOCIATES, INC.**  
Consulting Professionals for the Earth & Environment

110 South Downey Avenue  
Indianapolis, Indiana 46219-6406  
317-630-9060, fax 317-630-9065

Project Number: M01046  
Drawing File: Base Map.SKF  
Date Prepared: 6/2/2009  
Scale:

**Parent and Daughter Products Distribution in Groundwater**  
Third Quarter 2009  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana

**FIGURE**  
**4**



**MUNDELL & ASSOCIATES, INC.**

*Consulting Professionals for the Earth & Environment*

110 South Downey Avenue  
Indianapolis, Indiana 46219  
317-630-9060, fax 317-630-9065

Project Number: M01046  
Drawing File:  
Date Prepared: 6/2/2009  
Scale: 1"=80'

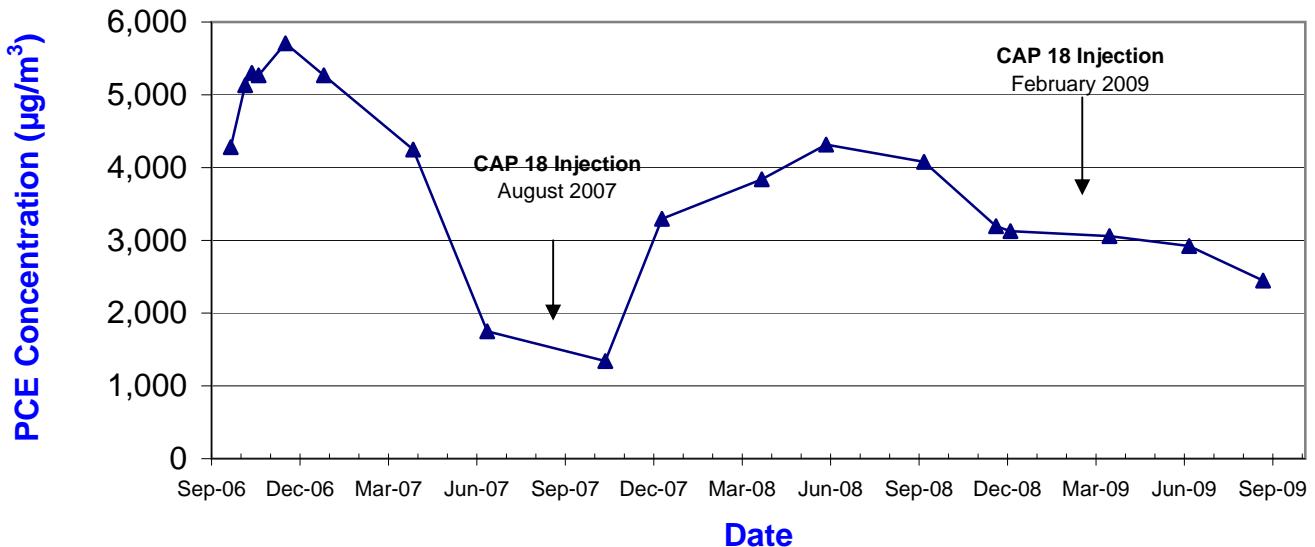
**Vapor Mitigation System Locations**

Third Quarter 2009  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana

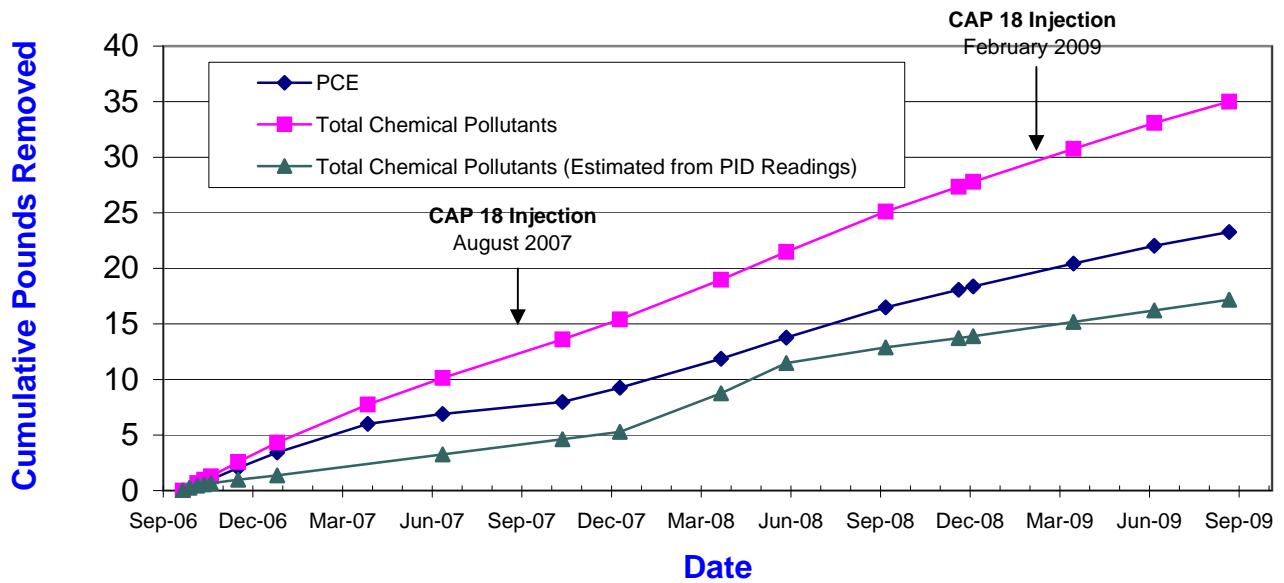
**FIGURE**

**5**

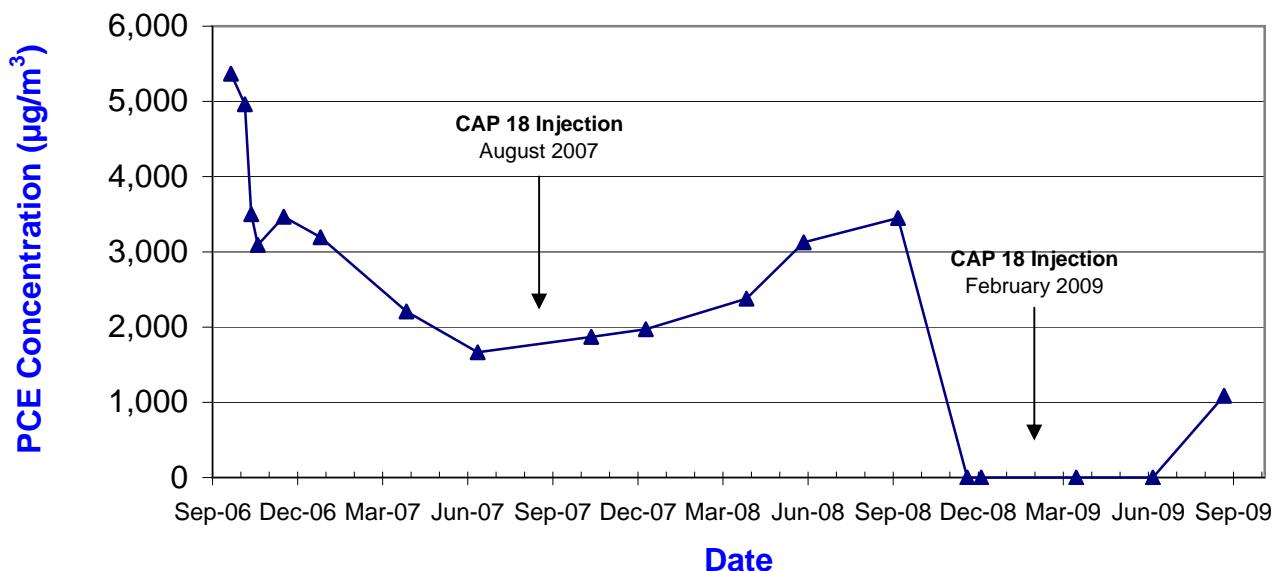
**PCE Vapor Concentrations Trend -  
Village Pantry Vapor Mitigation System (B1)**



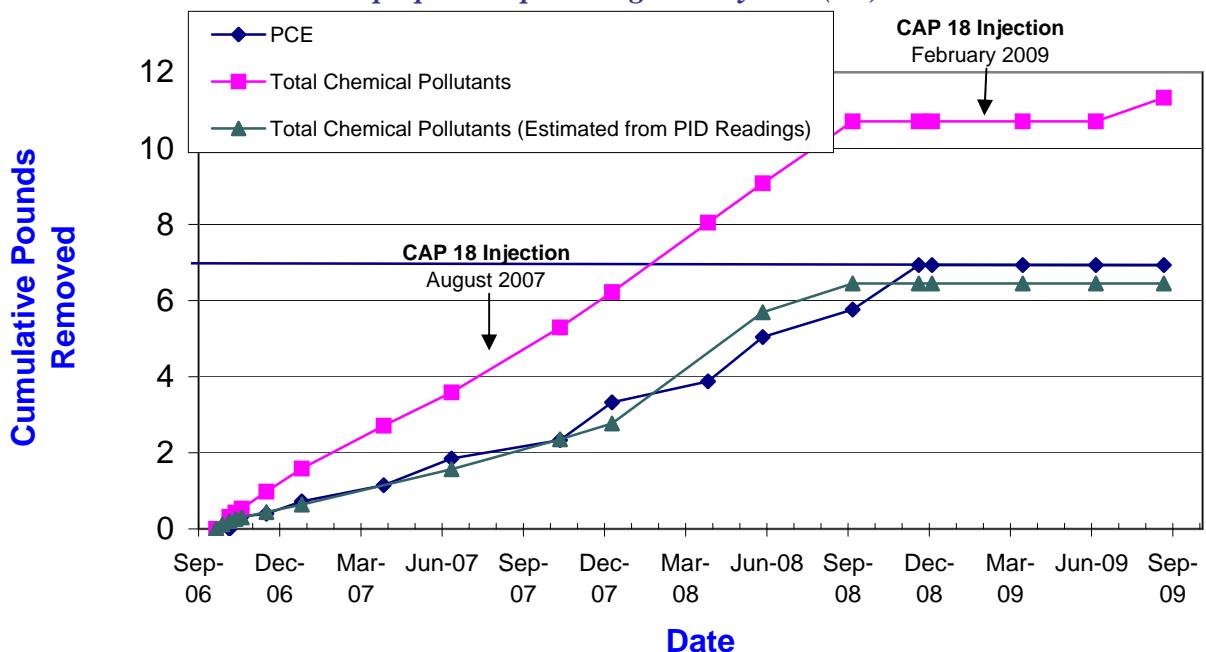
**Chemical Pounds Removed -  
Village Pantry Vapor Mitigation System (B1)**



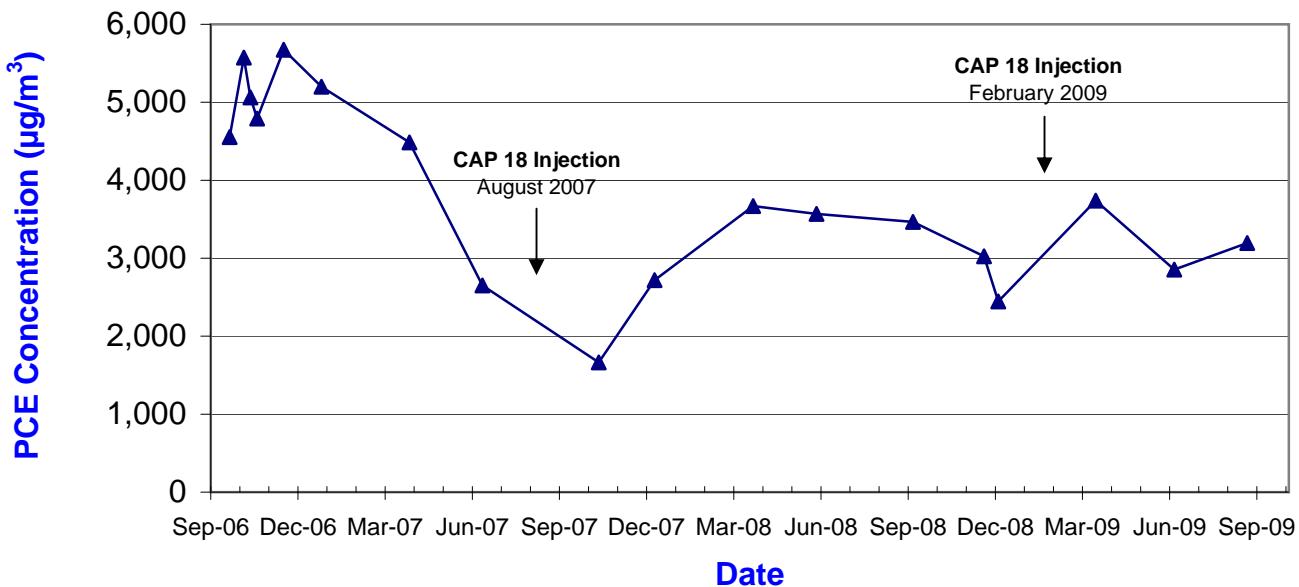
**PCE Vapor Concentrations Trend -  
Handicap Space Vapor Mitigation System (B2)**



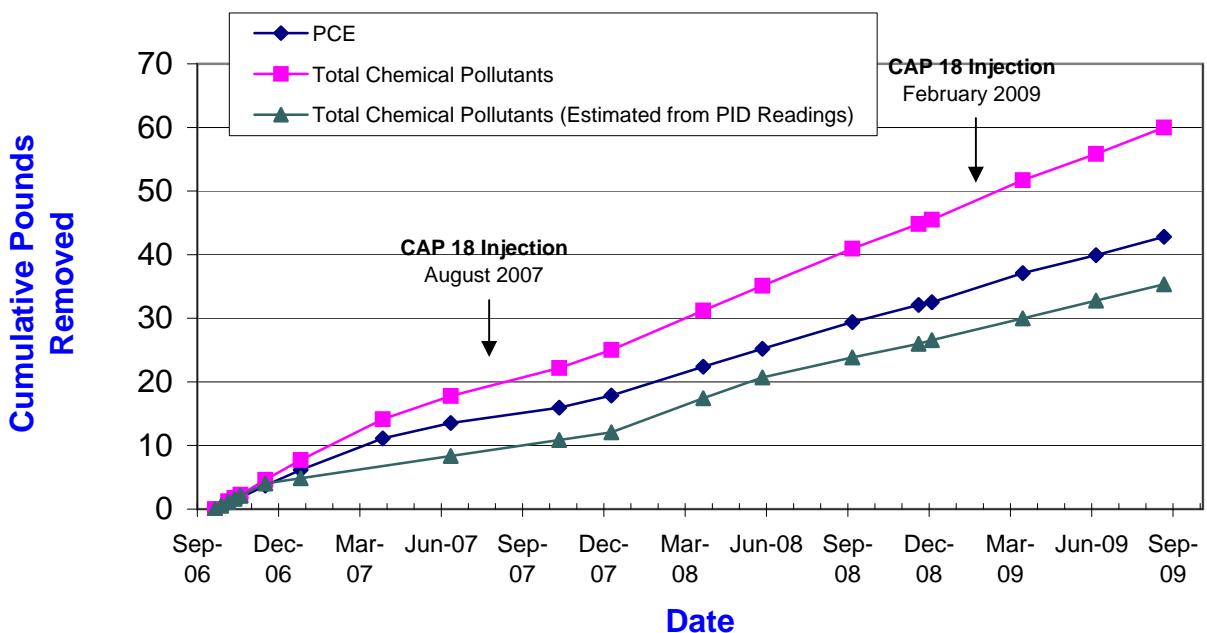
**Chemical Pounds Removed -  
Handicap Space Vapor Mitigation System (B2)**



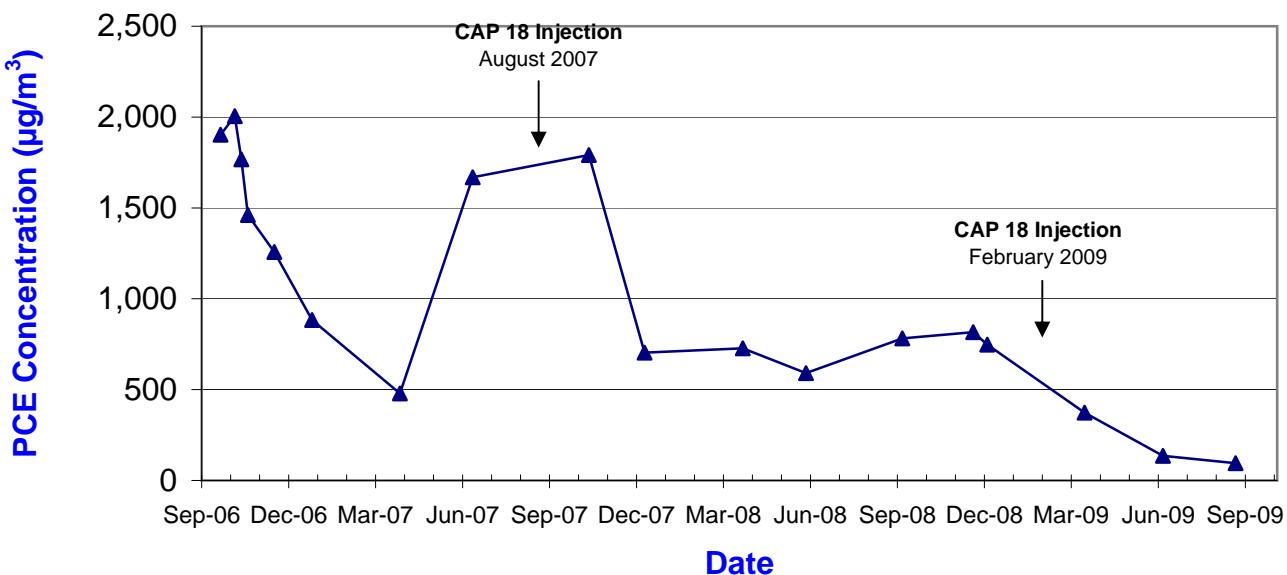
**PCE Vapor Concentrations Trend -  
Mexican Store Vapor Mitigation System (B3)**



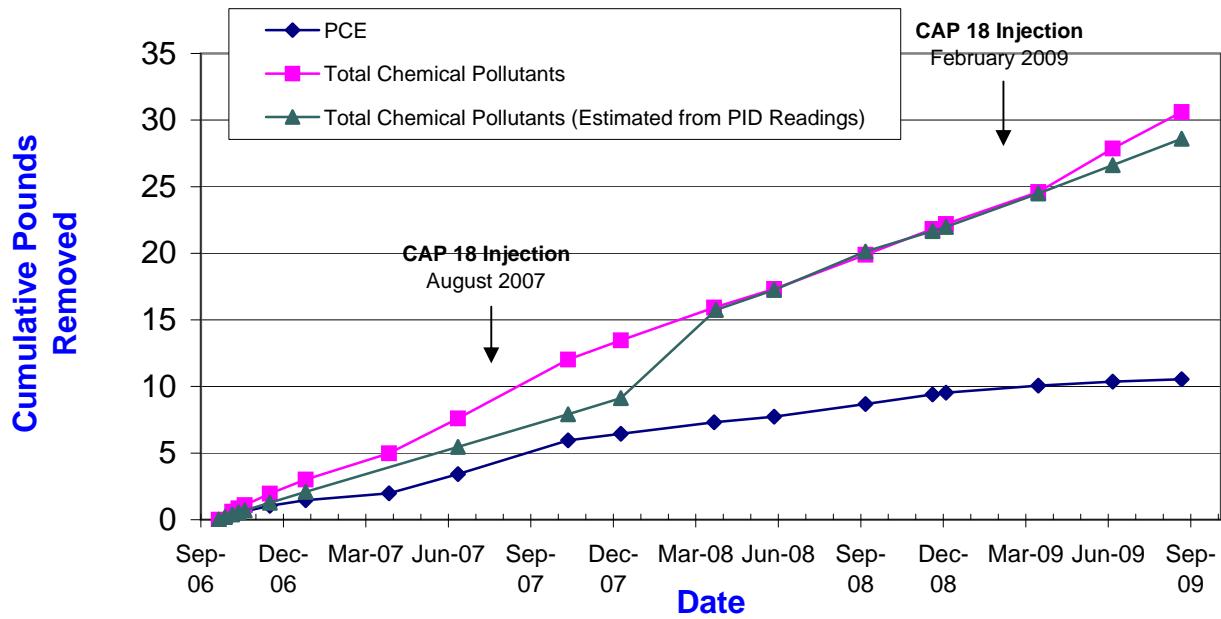
**Chemical Pounds Removed -  
Mexican Store Vapor Mitigation System (B3)**



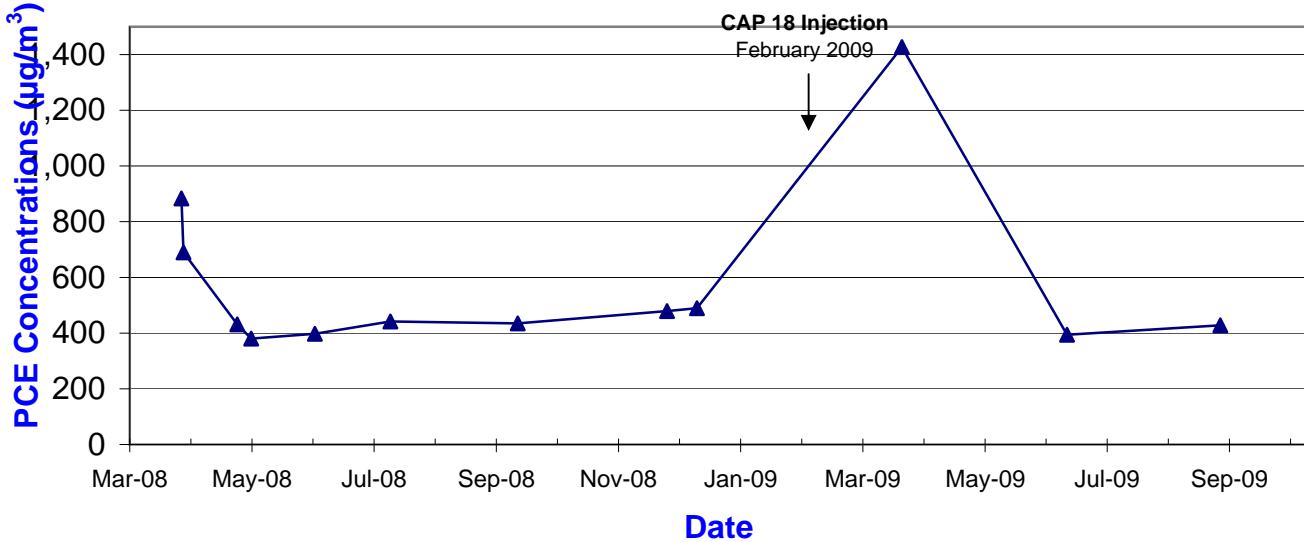
**PCE Vapor Concentrations Trend -  
Laundromat Vapor Mitigation System (B4)**



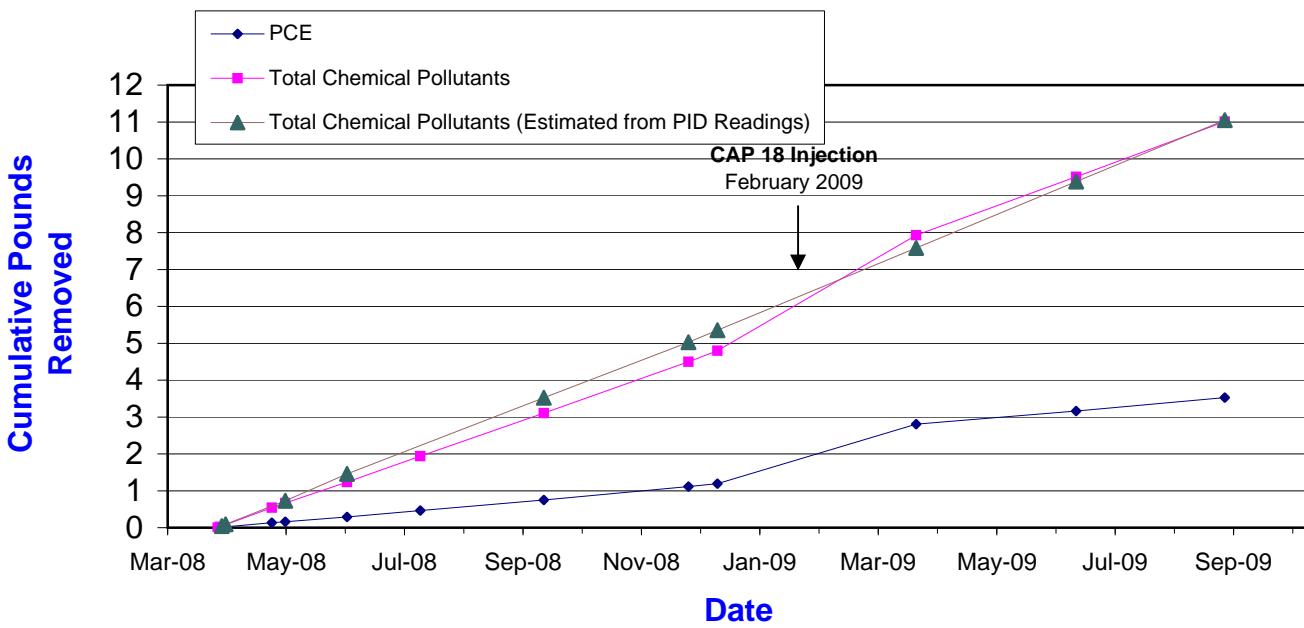
**Chemical Pounds Removed -  
Laundromat Vapor Mitigation System (B4)**



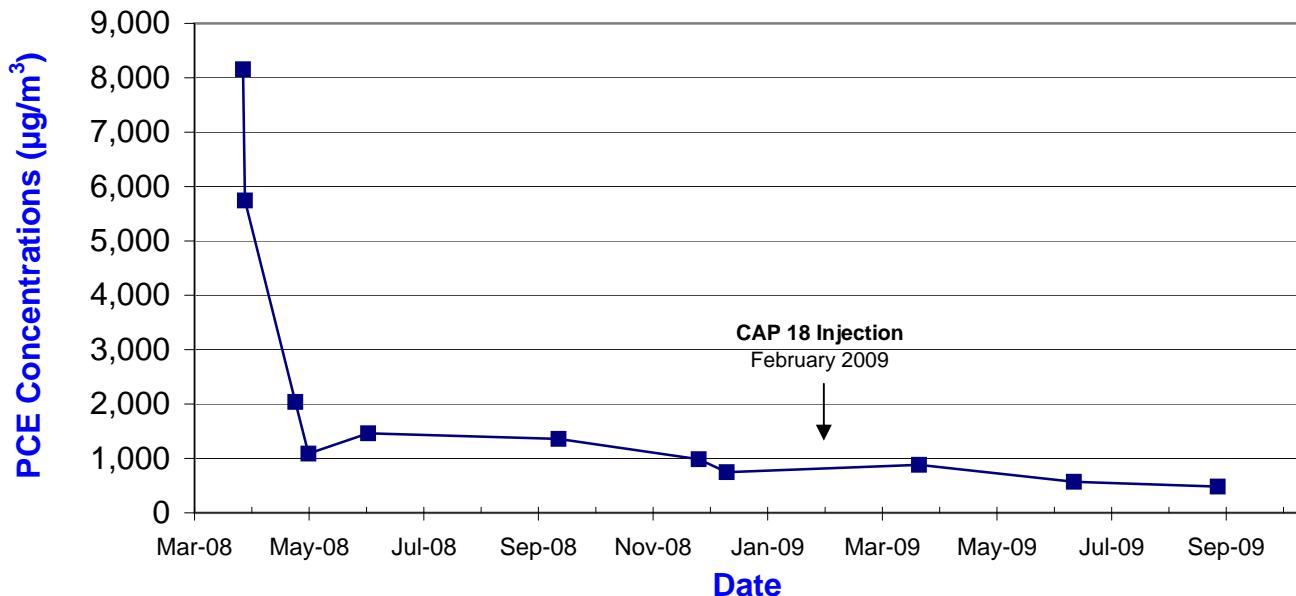
**PCE Vapor Concentrations Trend -  
Apartment Building 1 Vapor Mitigation System (B5)**



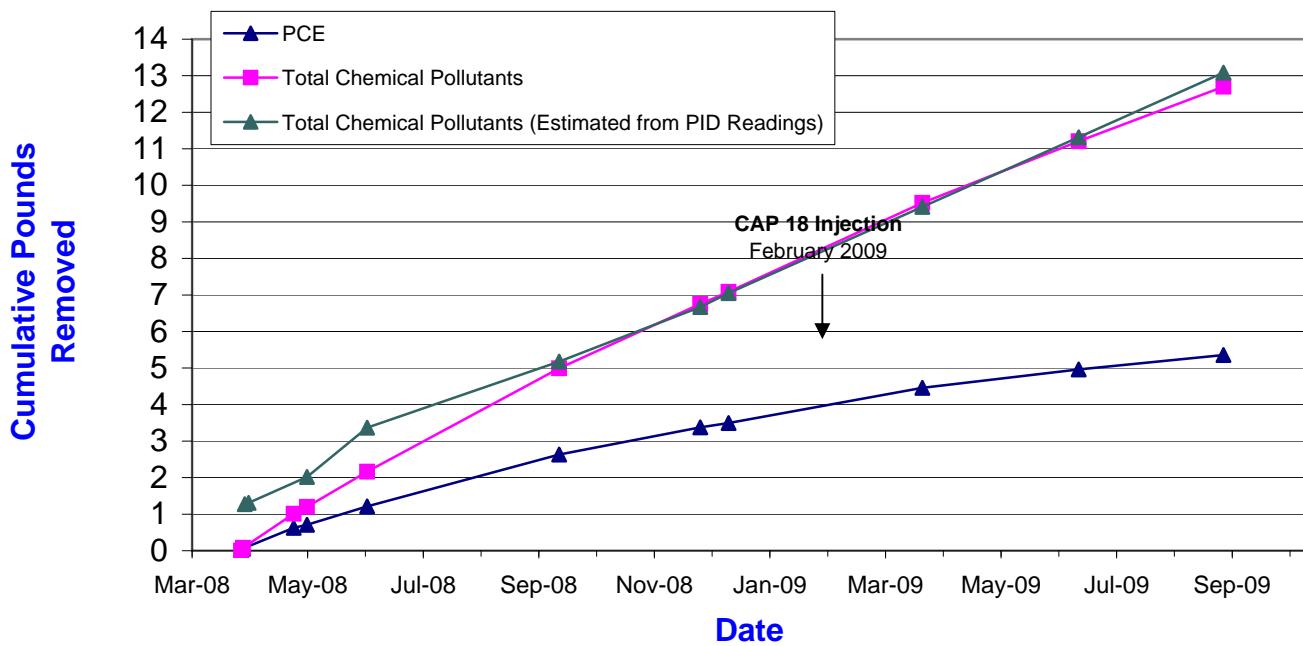
**Chemical Pounds Removed -  
Apartment Building 1 Vapor Mitigation System (B5)**



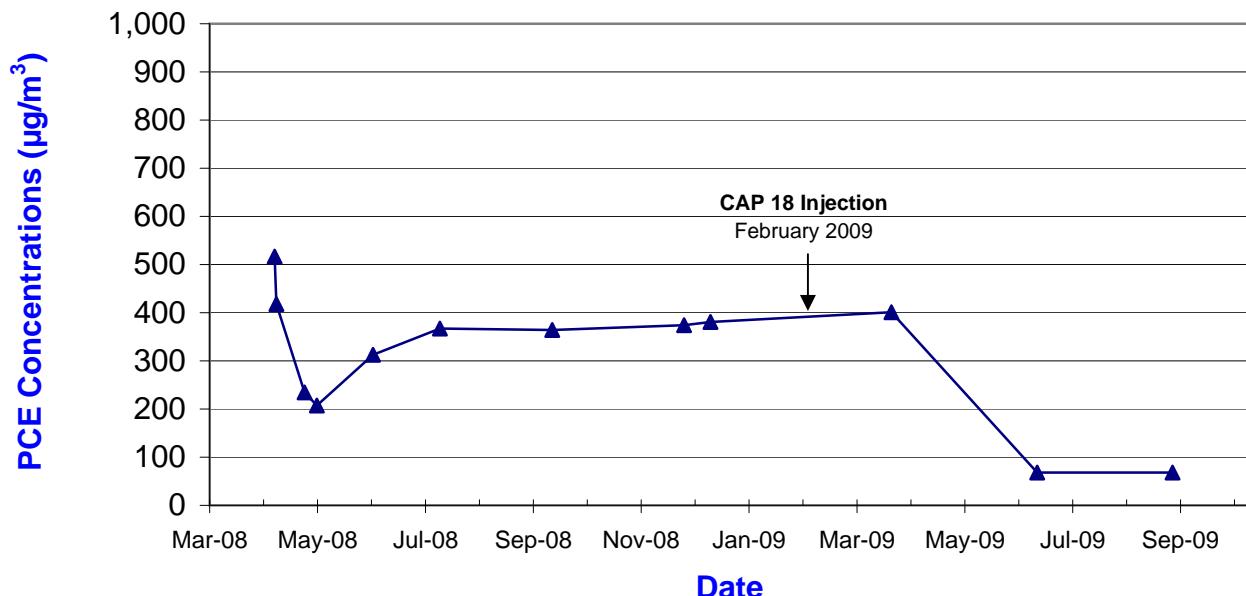
**PCE Vapor Concentrations Trend -  
Apartment Building 6 Vapor Mitigation System (B6)**



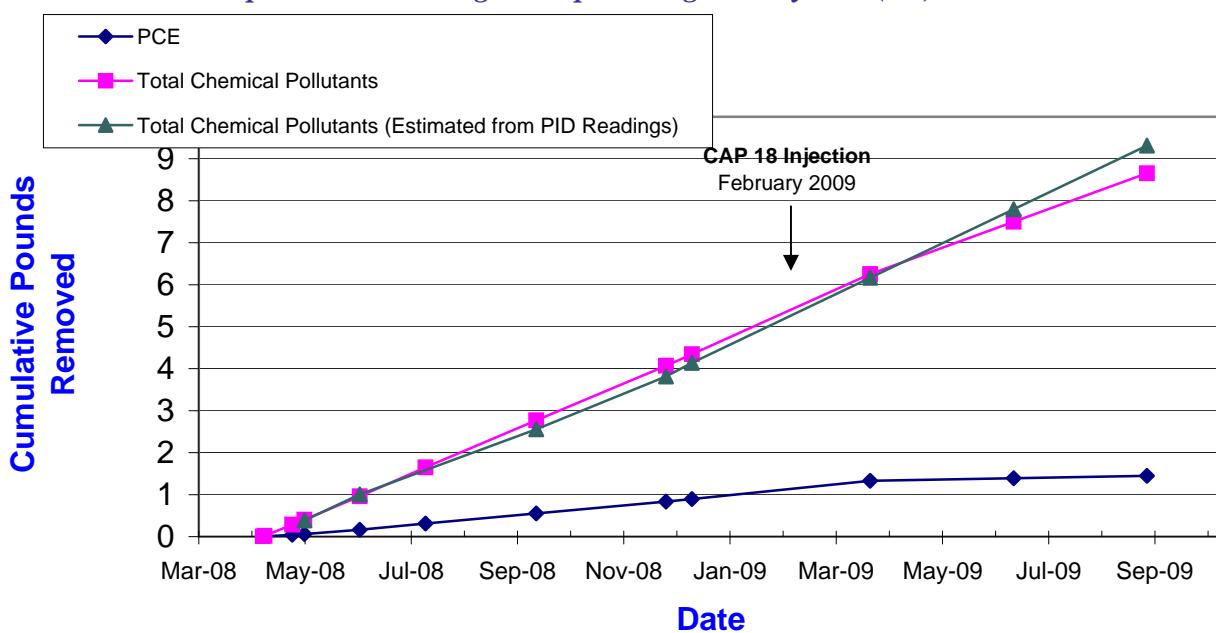
**Chemical Pounds Removed -  
Apartment Building 6 Vapor Mitigation System (B6)**



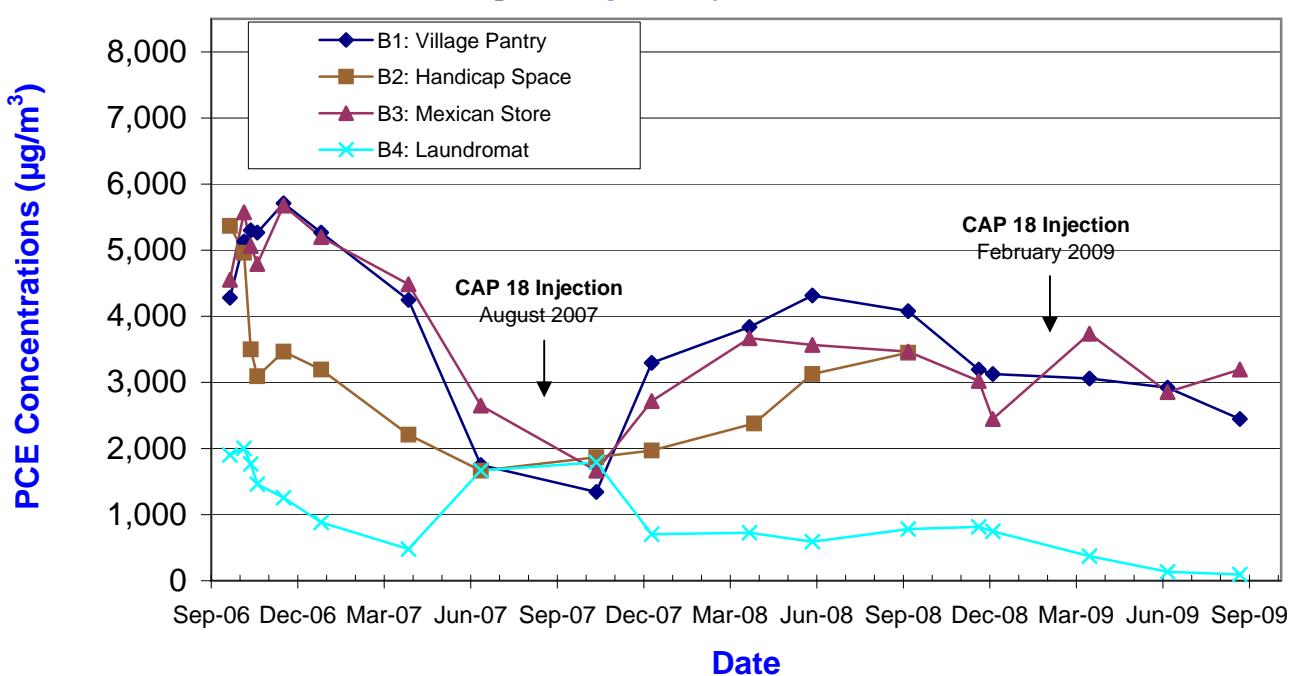
**PCE Vapor Concentrations Trend -  
Apartment Building 10 Vapor Mitigation System (B7)**



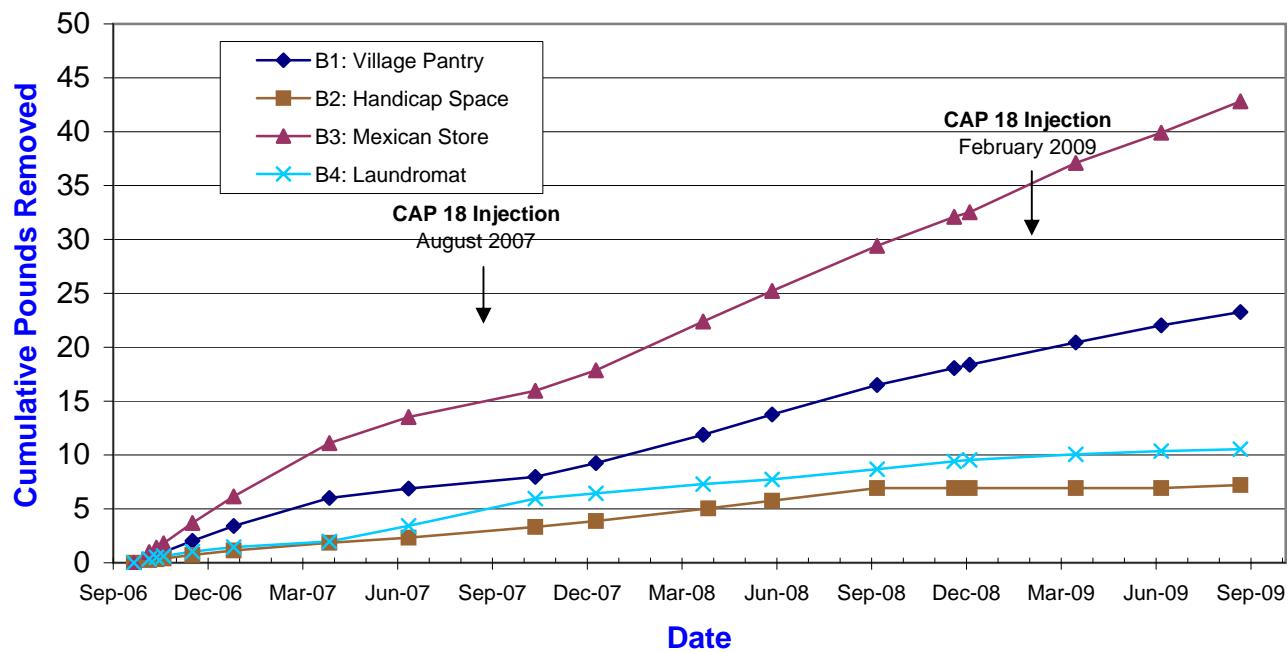
**Chemical Pounds Removed -  
Apartment Building 10 Vapor Mitigation System (B7)**



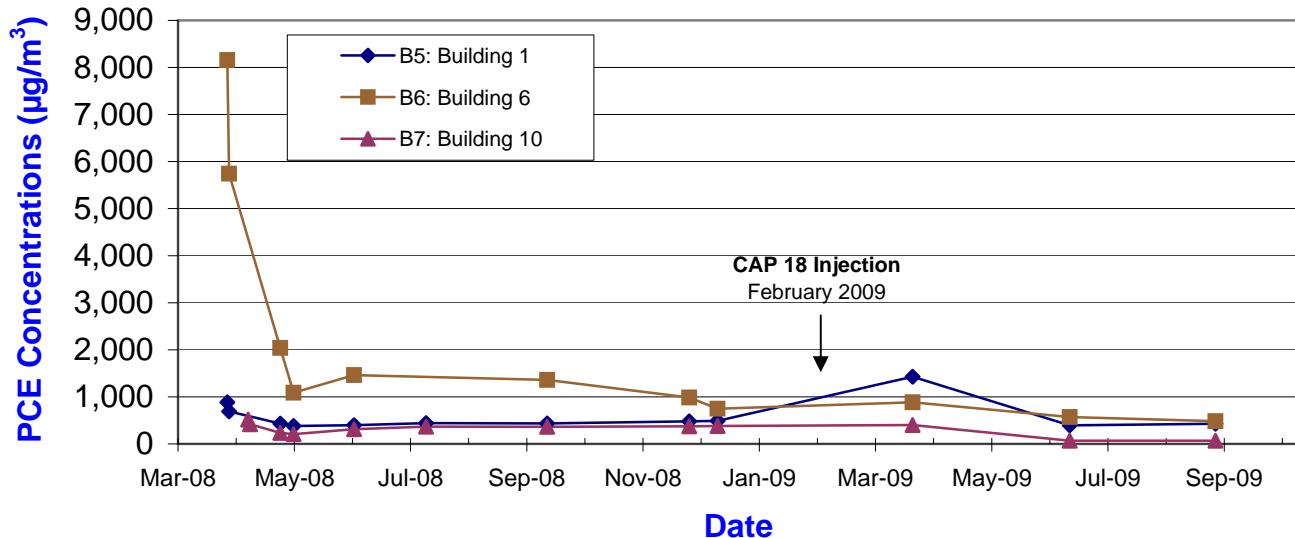
**PCE Concentrations Trend -  
Plaza Vapor Mitigation Systems (B1-B4)**



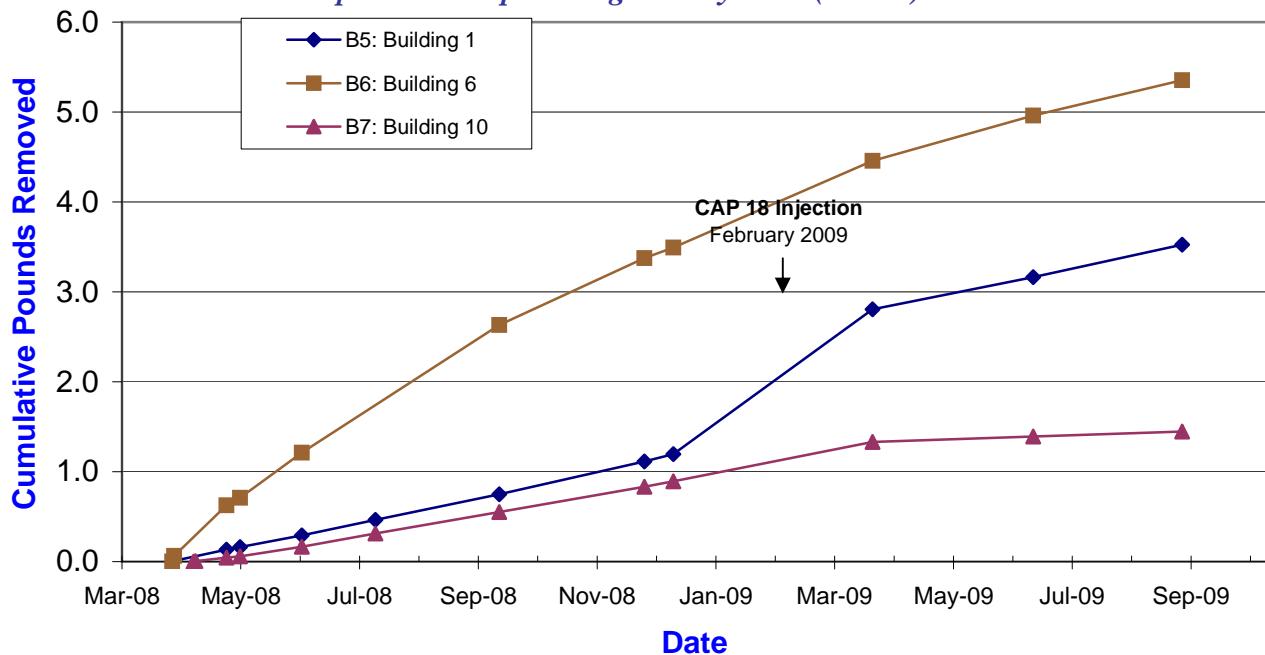
**PCE Pounds Removed -  
Plaza Vapor Mitigation Systems (B1-B4)**



**PCE Concentrations Trend -  
Apartment Vapor Mitigation Systems (B5-B7)**



**PCE Pounds Removed -  
Apartment Vapor Mitigation Systems (B5-B7)**



# **APPENDIX A**

# **LAB ANALYTICAL RESULTS**

August 20, 2009

Leena Lothe  
Mundell & Associates, Inc.  
110 South Downey Avenue  
Indianapolis, IN 46219

RE: Project: Michigan Plaza/M01046  
Pace Project No.: 5028990

Dear Leena Lothe:

Enclosed are the analytical results for sample(s) received by the laboratory on August 06, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Illinois/NELAC Certification #: 100418  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042  
Ohio VAP: CL0065  
Pennsylvania: 68-00791  
West Virginia Certification #: 330

Enclosures

## REPORT OF LABORATORY ANALYSIS

Page 1 of 17

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without the written consent of Pace Analytical Services, Inc..



## SAMPLE SUMMARY

Project: Michigan Plaza/M01046  
 Pace Project No.: 5028990

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5028990001	MMW-1S	Water	08/05/09 14:10	08/06/09 11:15
5028990002	MMW-8S	Water	08/05/09 12:45	08/06/09 11:15
5028990003	MMW-9S	Water	08/05/09 14:35	08/06/09 11:15
5028990004	MMW-11S	Water	08/05/09 12:20	08/06/09 11:15
5028990005	MMW-11D	Water	08/05/09 12:35	08/06/09 11:15
5028990006	MMW-12S	Water	08/05/09 13:50	08/06/09 11:15
5028990007	MMW-13D	Water	08/05/09 11:45	08/06/09 11:15
5028990008	MMW-14D	Water	08/05/09 13:09	08/06/09 11:15
5028990009	Trip Blank	Water	08/05/09 08:00	08/06/09 11:15
5028990010	MMW-10S	Water	08/05/09 15:00	08/06/09 11:15

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## SAMPLE ANALYTE COUNT

Project: Michigan Plaza/M01046  
Pace Project No.: 5028990

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5028990001	<b>MMW-1S</b>	ASTM D516-90,02	TPD	1
		EPA 353.2	CLS	1
		EPA 8260	SLB	18
5028990002	<b>MMW-8S</b>	EPA 8260	SLB	18
5028990003	<b>MMW-9S</b>	ASTM D516-90,02	TPD	1
		EPA 353.2	CLS	1
		EPA 8260	SLB	18
5028990004	<b>MMW-11S</b>	SM 2340B	FRW	1
		ASTM D516-90,02	TPD	1
		EPA 353.2	CLS	1
5028990005	<b>MMW-11D</b>	EPA 8260	SLB	18
		EPA 8260	SLB	18
		EPA 8260	SLB	18
5028990006	<b>MMW-12S</b>	EPA 8260	SLB	18
5028990007	<b>MMW-13D</b>	EPA 8260	SLB	18
5028990008	<b>MMW-14D</b>	EPA 8260	SLB	18
5028990009	<b>Trip Blank</b>	EPA 8260	SLB	18
5028990010	<b>MMW-10S</b>	EPA 8260	SLB	18

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-1S	Lab ID: 5028990001	Collected: 08/05/09 14:10	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 09:50	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 09:50	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 09:50	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 09:50	75-35-4	
cis-1,2-Dichloroethene	<b>71.3</b>	ug/L	5.0	1		08/10/09 09:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 09:50	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 09:50	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 09:50	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 09:50	91-20-3	
Tetrachloroethene	<b>195</b>	ug/L	5.0	1		08/10/09 09:50	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 09:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 09:50	71-55-6	
Trichloroethene	<b>22.9</b>	ug/L	5.0	1		08/10/09 09:50	79-01-6	
Vinyl chloride	<b>9.3</b>	ug/L	2.0	1		08/10/09 09:50	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 09:50	1330-20-7	
Dibromofluoromethane (S)	96 %		80-123	1		08/10/09 09:50	1868-53-7	
4-Bromofluorobenzene (S)	99 %		70-126	1		08/10/09 09:50	460-00-4	
Toluene-d8 (S)	94 %		80-116	1		08/10/09 09:50	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 12:12		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>150</b>	mg/L	50.0	1		08/07/09 10:06	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-8S	Lab ID: 5028990002	Collected: 08/05/09 12:45	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 10:19	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 10:19	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 10:19	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 10:19	75-35-4	
cis-1,2-Dichloroethene	<b>83.8</b>	ug/L	5.0	1		08/10/09 10:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 10:19	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 10:19	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 10:19	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 10:19	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 10:19	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 10:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 10:19	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 10:19	79-01-6	
Vinyl chloride	<b>261</b>	ug/L	2.0	1		08/10/09 10:19	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 10:19	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	1		08/10/09 10:19	1868-53-7	
4-Bromofluorobenzene (S)	100 %		70-126	1		08/10/09 10:19	460-00-4	
Toluene-d8 (S)	95 %		80-116	1		08/10/09 10:19	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-9S	Lab ID: 5028990003	Collected: 08/05/09 14:35	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>2340B Hardness, Total (Calc.)</b>	Analytical Method: SM 2340B							
Total Hardness	<b>692</b> mg/L		1.0	1		08/19/09 08:35		
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND ug/L		50.0	10		08/10/09 10:49	71-43-2	1d,D4
Carbon tetrachloride	ND ug/L		50.0	10		08/10/09 10:49	56-23-5	
Chloroform	ND ug/L		50.0	10		08/10/09 10:49	67-66-3	
1,1-Dichloroethene	ND ug/L		50.0	10		08/10/09 10:49	75-35-4	
cis-1,2-Dichloroethene	<b>5010</b> ug/L		500	100		08/10/09 11:19	156-59-2	
trans-1,2-Dichloroethene	<b>64.2</b> ug/L		50.0	10		08/10/09 10:49	156-60-5	
Ethylbenzene	ND ug/L		50.0	10		08/10/09 10:49	100-41-4	
Methylene chloride	ND ug/L		50.0	10		08/10/09 10:49	75-09-2	
Naphthalene	ND ug/L		50.0	10		08/10/09 10:49	91-20-3	
Tetrachloroethene	ND ug/L		50.0	10		08/10/09 10:49	127-18-4	1d
Toluene	ND ug/L		50.0	10		08/10/09 10:49	108-88-3	
1,1,1-Trichloroethane	ND ug/L		50.0	10		08/10/09 10:49	71-55-6	
Trichloroethene	ND ug/L		50.0	10		08/10/09 10:49	79-01-6	1d
Vinyl chloride	<b>1110</b> ug/L		20.0	10		08/10/09 10:49	75-01-4	
Xylene (Total)	ND ug/L		100	10		08/10/09 10:49	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	10		08/10/09 10:49	1868-53-7	
4-Bromofluorobenzene (S)	101 %		70-126	10		08/10/09 10:49	460-00-4	
Toluene-d8 (S)	95 %		80-116	10		08/10/09 10:49	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND mg/L		0.10	1		08/07/09 12:13		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>208</b> mg/L		50.0	1		08/07/09 10:06	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-11S	Lab ID: 5028990004	Collected: 08/05/09 12:20	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 11:48	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 11:48	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 11:48	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 11:48	75-35-4	
cis-1,2-Dichloroethene	<b>80.7</b>	ug/L	5.0	1		08/10/09 11:48	156-59-2	
trans-1,2-Dichloroethene	<b>5.5</b>	ug/L	5.0	1		08/10/09 11:48	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 11:48	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 11:48	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 11:48	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 11:48	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 11:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 11:48	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 11:48	79-01-6	
Vinyl chloride	<b>3.1</b>	ug/L	2.0	1		08/10/09 11:48	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 11:48	1330-20-7	
Dibromofluoromethane (S)	95 %		80-123	1		08/10/09 11:48	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	1		08/10/09 11:48	460-00-4	
Toluene-d8 (S)	102 %		80-116	1		08/10/09 11:48	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 12:09		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>176</b>	mg/L	50.0	1		08/07/09 10:06	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-11D	Lab ID: 5028990005	Collected: 08/05/09 12:35	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 12:48	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 12:48	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 12:48	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 12:48	75-35-4	
cis-1,2-Dichloroethene	<b>485</b>	ug/L	50.0	10		08/11/09 09:47	156-59-2	
trans-1,2-Dichloroethene	<b>22.6</b>	ug/L	5.0	1		08/10/09 12:48	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 12:48	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 12:48	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 12:48	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 12:48	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 12:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 12:48	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 12:48	79-01-6	
Vinyl chloride	<b>15.3</b>	ug/L	2.0	1		08/10/09 12:48	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 12:48	1330-20-7	
Dibromofluoromethane (S)	98 %		80-123	1		08/10/09 12:48	1868-53-7	
4-Bromofluorobenzene (S)	95 %		70-126	1		08/10/09 12:48	460-00-4	
Toluene-d8 (S)	95 %		80-116	1		08/10/09 12:48	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-12S	Lab ID: 5028990006	Collected: 08/05/09 13:50	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 13:18	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 13:18	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 13:18	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 13:18	75-35-4	
cis-1,2-Dichloroethene	<b>47.3</b>	ug/L	5.0	1		08/10/09 13:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 13:18	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 13:18	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 13:18	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 13:18	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 13:18	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 13:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 13:18	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 13:18	79-01-6	
Vinyl chloride	<b>15.2</b>	ug/L	2.0	1		08/10/09 13:18	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 13:18	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	1		08/10/09 13:18	1868-53-7	
4-Bromofluorobenzene (S)	91 %		70-126	1		08/10/09 13:18	460-00-4	
Toluene-d8 (S)	97 %		80-116	1		08/10/09 13:18	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-13D	Lab ID: 5028990007	Collected: 08/05/09 11:45	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 13:48	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 13:48	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 13:48	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 13:48	75-35-4	
cis-1,2-Dichloroethene	<b>672</b>	ug/L	50.0	10		08/10/09 14:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 13:48	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 13:48	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 13:48	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 13:48	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 13:48	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 13:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 13:48	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 13:48	79-01-6	
Vinyl chloride	<b>59.2</b>	ug/L	2.0	1		08/10/09 13:48	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 13:48	1330-20-7	
Dibromofluoromethane (S)	99 %		80-123	1		08/10/09 13:48	1868-53-7	
4-Bromofluorobenzene (S)	94 %		70-126	1		08/10/09 13:48	460-00-4	
Toluene-d8 (S)	95 %		80-116	1		08/10/09 13:48	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-14D	Lab ID: 5028990008	Collected: 08/05/09 13:09	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 14:47	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 14:47	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 14:47	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 14:47	75-35-4	
cis-1,2-Dichloroethene	<b>589</b>	ug/L	50.0	10		08/10/09 15:17	156-59-2	
trans-1,2-Dichloroethene	<b>10.9</b>	ug/L	5.0	1		08/10/09 14:47	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 14:47	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 14:47	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 14:47	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 14:47	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 14:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 14:47	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 14:47	79-01-6	
Vinyl chloride	<b>79.1</b>	ug/L	2.0	1		08/10/09 14:47	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 14:47	1330-20-7	
Dibromofluoromethane (S)	102 %		80-123	1		08/10/09 14:47	1868-53-7	
4-Bromofluorobenzene (S)	96 %		70-126	1		08/10/09 14:47	460-00-4	
Toluene-d8 (S)	100 %		80-116	1		08/10/09 14:47	2037-26-5	

Date: 08/20/2009 03:27 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: Trip Blank	Lab ID: 5028990009	Collected: 08/05/09 08:00	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 09:20	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 09:20	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 09:20	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 09:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 09:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/10/09 09:20	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 09:20	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 09:20	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 09:20	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 09:20	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 09:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 09:20	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 09:20	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/10/09 09:20	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 09:20	1330-20-7	
Dibromofluoromethane (S)	93 %		80-123	1		08/10/09 09:20	1868-53-7	
4-Bromofluorobenzene (S)	99 %		70-126	1		08/10/09 09:20	460-00-4	
Toluene-d8 (S)	95 %		80-116	1		08/10/09 09:20	2037-26-5	

Date: 08/20/2009 03:27 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

Sample: MMW-10S	Lab ID: 5028990010	Collected: 08/05/09 15:00	Received: 08/06/09 11:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/10/09 15:47	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/10/09 15:47	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/10/09 15:47	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/10/09 15:47	75-35-4	
cis-1,2-Dichloroethene	<b>224</b>	ug/L	5.0	1		08/10/09 15:47	156-59-2	
trans-1,2-Dichloroethene	<b>5.5</b>	ug/L	5.0	1		08/10/09 15:47	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/10/09 15:47	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/10/09 15:47	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/10/09 15:47	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/10/09 15:47	127-18-4	
Toluene	ND	ug/L	5.0	1		08/10/09 15:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/10/09 15:47	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/10/09 15:47	79-01-6	
Vinyl chloride	<b>156</b>	ug/L	2.0	1		08/10/09 15:47	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/10/09 15:47	1330-20-7	
Dibromofluoromethane (S)	100 %		80-123	1		08/10/09 15:47	1868-53-7	
4-Bromofluorobenzene (S)	95 %		70-126	1		08/10/09 15:47	460-00-4	
Toluene-d8 (S)	96 %		80-116	1		08/10/09 15:47	2037-26-5	

Date: 08/20/2009 03:27 PM

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

QC Batch: WETA/3988 Analysis Method: ASTM D516-90,02

QC Batch Method: ASTM D516-90,02 Analysis Description: ASTM D516-9002 Sulfate Water

Associated Lab Samples: 5028990001, 5028990003, 5028990004

METHOD BLANK: 330584 Matrix: Water

Associated Lab Samples: 5028990001, 5028990003, 5028990004

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Sulfate	mg/L	ND	5.0	08/07/09 10:06	

LABORATORY CONTROL SAMPLE: 330585

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Sulfate	mg/L	20	19.7	98	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 330586 330587

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		6063782004	Spike	Spike	Result	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfate	mg/L	87.8	100	100	183	186	95	98	75-125	2	20		

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046  
Pace Project No.: 5028990

QC Batch:	WETA/3992	Analysis Method:	EPA 353.2
QC Batch Method:	EPA 353.2	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples:	5028990001, 5028990003, 5028990004		

METHOD BLANK: 330716 Matrix: Water

Associated Lab Samples: 5028990001, 5028990003, 5028990004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	08/07/09 12:07	

LABORATORY CONTROL SAMPLE: 330717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.90	90	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 330718 330719

Parameter	Units	5028990004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Nitrogen, Nitrate	mg/L	ND	1	1	0.91	0.92	84	85	90-110	.8	20	M3

## **QUALITY CONTROL DATA**

Project: Michigan Plaza/M01046

Pace Project No.: 5028990

QC Batch: MSV/17889 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV  
Associated Lab Samples: 5028990001, 5028990002, 5028990003, 5028990004, 5028990005, 5028990006, 5028990007, 5028990008,  
5028990009, 5028990010

METHOD BLANK: 331517                                  Matrix: Water

Associated Lab Samples: 5028990001, 5028990002, 5028990003, 5028990004, 5028990005, 5028990006, 5028990007, 5028990008, 5028990009, 5028990010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/10/09 08:50	
1,1-Dichloroethene	ug/L	ND	5.0	08/10/09 08:50	
Benzene	ug/L	ND	5.0	08/10/09 08:50	
Carbon tetrachloride	ug/L	ND	5.0	08/10/09 08:50	
Chloroform	ug/L	ND	5.0	08/10/09 08:50	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/10/09 08:50	
Ethylbenzene	ug/L	ND	5.0	08/10/09 08:50	
Methylene chloride	ug/L	ND	5.0	08/10/09 08:50	
Naphthalene	ug/L	ND	5.0	08/10/09 08:50	
Tetrachloroethene	ug/L	ND	5.0	08/10/09 08:50	
Toluene	ug/L	ND	5.0	08/10/09 08:50	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/10/09 08:50	
Trichloroethene	ug/L	ND	5.0	08/10/09 08:50	
Vinyl chloride	ug/L	ND	2.0	08/10/09 08:50	
Xylene (Total)	ug/L	ND	10.0	08/10/09 08:50	
4-Bromofluorobenzene (S)	%	101	70-126	08/10/09 08:50	
Dibromofluoromethane (S)	%	97	80-123	08/10/09 08:50	
Toluene-d8 (S)	%	96	80-116	08/10/09 08:50	

Date: 08/20/2009 03:27 PM

## **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Michigan Plaza/M01046  
Pace Project No.: 5028990

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

### ANALYTE QUALIFIERS

1d Compound evaluated to 5ug/L per MDL. slb08/11/09

D4 Sample was diluted due to the presence of high levels of target analytes.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.



**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

## Sample Condition Upon Receipt

Client Name: Munde IIProject # 5028990Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Optional Pro/Title/Date Pro/Name
--

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noPacking Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_Thermometer Used 123456 Type of Ice: Wet Blue None  Samples on ice, cooling process has begunCooler Temperature 1.7

Biological Tissue Is Frozen: Yes No

Date and Initials of person examining  
contents: 8/6/09 TJ

Temp should be above freezing to 6°C Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>Nitrate</u> .
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>Recd 3 MMW-105 not on col</u>
All containers needing preservation have been checked:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

## Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Project Manager Review: Yima SayerDate: 8/6/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

CLIENT: Mundell

## Sample Container Count

COC PAGE 1 of 1  
COC ID# 12471458

Project # 5028990

Sample line

Sample Line

## Comments

1	3	1
2	3	1
3	3	1
4	3	1
5	3	1
6	3	1
7	3	1
8	3	1
9	3	1
10	3	1
11	3	1
12	3	1

3. *Voe Vœ* (Vœ Vœ) *Mm m m - los not on 'COC*

Container Codes

DG9H	40mL HCl amber vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H <sub>2</sub> SO <sub>4</sub> plastic	DG9S	40mL H <sub>2</sub> SO <sub>4</sub> amber vial
WG FU	4oz clear soil jar	AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	Wipe/Swab	
BP2U	500mL unpreserved plastic	AG2S	500mL H <sub>2</sub> SO <sub>4</sub> amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H <sub>2</sub> SO <sub>4</sub> plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U Summa Can	
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3A	250mL NaOH, Asc Acid plastic	VG9H	40mL HCl clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H <sub>2</sub> SO <sub>4</sub> plastic	BG1S	1 liter H <sub>2</sub> SO <sub>4</sub> clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H <sub>2</sub> SO <sub>4</sub> glass amber	BG1T	1 liter Na Thiosulfate clear gla	C Air Cassettes		VSG	Headspace septa vial & HCl
AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfite amber vial	WGFX	4oz wide jar whexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPI C	Zinloc Bag

August 21, 2009

Leena Lothe  
Mundell & Associates, Inc.  
110 South Downey Avenue  
Indianapolis, IN 46219

RE: Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

Dear Leena Lothe:

Enclosed are the analytical results for sample(s) received by the laboratory on August 07, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Illinois/NELAC Certification #: 100418  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042  
Ohio VAP: CL0065  
Pennsylvania: 68-00791  
West Virginia Certification #: 330

Enclosures

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5029062001	MMW-P-01	Water	08/06/09 11:00	08/07/09 10:55
5029062002	MMW-P-02	Water	08/06/09 09:15	08/07/09 10:55
5029062003	MMW-P-03S	Water	08/06/09 10:00	08/07/09 10:55
5029062004	MMW-P-03D	Water	08/06/09 09:35	08/07/09 10:55
5029062005	MMW-P-05	Water	08/06/09 10:20	08/07/09 10:55
5029062006	MMW-P-06	Water	08/06/09 10:40	08/07/09 10:55
5029062007	MMW-P-07	Water	08/06/09 11:20	08/07/09 10:55
5029062008	MMW-P-08	Water	08/06/09 11:45	08/07/09 10:55
5029062009	MMW-P-09S	Water	08/06/09 13:10	08/07/09 10:55
5029062010	MMW-P-09D	Water	08/06/09 13:25	08/07/09 10:55
5029062011	MMW-P-10S	Water	08/06/09 12:10	08/07/09 10:55
5029062012	MMW-P-10D	Water	08/06/09 11:55	08/07/09 10:55
5029062013	MMW-C-01	Water	08/06/09 14:00	08/07/09 10:55
5029062014	MMW-C-02	Water	08/06/09 13:45	08/07/09 10:55
5029062015	DUP-1	Water	08/06/09 08:00	08/07/09 10:55
5029062016	DUP-2	Water	08/06/09 08:00	08/07/09 10:55
5029062017	Trip Blank	Water	08/06/09 08:00	08/07/09 10:55

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5029062001	MMW-P-01	EPA 8260	AMV	18
5029062002	MMW-P-02	EPA 8260	AMV	18
5029062003	MMW-P-03S	ASTM D516-90,02 EPA 353.2 EPA 8260 SM 2340B	TPD CLS AMV FRW	1 1 18 1
5029062004	MMW-P-03D	ASTM D516-90,02 EPA 353.2 EPA 8260	TPD CLS AMV	1 1 18
5029062005	MMW-P-05	EPA 8260	AMV	18
5029062006	MMW-P-06	ASTM D516-90,02 EPA 353.2 EPA 8260	TPD CLS AMV	1 1 18
5029062007	MMW-P-07	EPA 8260	AMV	18
5029062008	MMW-P-08	ASTM D516-90,02 EPA 353.2 EPA 8260 SM 2340B	TPD CLS AMV FRW	1 1 18 1
5029062009	MMW-P-09S	ASTM D516-90,02 EPA 353.2 EPA 8260	TPD CLS AMV	1 1 18
5029062010	MMW-P-09D	EPA 8260	AMV	18
5029062011	MMW-P-10S	ASTM D516-90,02 EPA 353.2 EPA 8260	TPD CLS AMV	1 1 18
5029062012	MMW-P-10D	EPA 8260	AMV	18
5029062013	MMW-C-01	EPA 8260	AMV	18
5029062014	MMW-C-02	EPA 8260	AMV	18
5029062015	DUP-1	ASTM D516-90,02 EPA 353.2 EPA 8260 SM 2340B	TPD CLS AMV FRW	1 1 18 1
5029062016	DUP-2	EPA 8260	AMV	18
5029062017	Trip Blank	EPA 8260	AMV	18

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-01	Lab ID: 5029062001	Collected: 08/06/09 11:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	10		08/12/09 21:32	71-43-2	
Carbon tetrachloride	ND	ug/L	50.0	10		08/12/09 21:32	56-23-5	
Chloroform	ND	ug/L	50.0	10		08/12/09 21:32	67-66-3	
1,1-Dichloroethene	ND	ug/L	50.0	10		08/12/09 21:32	75-35-4	
cis-1,2-Dichloroethene	<b>12200</b>	ug/L	500	100		08/12/09 22:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	50.0	10		08/12/09 21:32	156-60-5	
Ethylbenzene	ND	ug/L	50.0	10		08/12/09 21:32	100-41-4	
Methylene chloride	ND	ug/L	50.0	10		08/12/09 21:32	75-09-2	
Naphthalene	ND	ug/L	50.0	10		08/12/09 21:32	91-20-3	
Tetrachloroethene	<b>97.4</b>	ug/L	50.0	10		08/12/09 21:32	127-18-4	
Toluene	ND	ug/L	50.0	10		08/12/09 21:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	50.0	10		08/12/09 21:32	71-55-6	
Trichloroethene	<b>37.0J</b>	ug/L	50.0	10		08/12/09 21:32	79-01-6	J
Vinyl chloride	<b>3730</b>	ug/L	200	100		08/12/09 22:06	75-01-4	
Xylene (Total)	ND	ug/L	100	10		08/12/09 21:32	1330-20-7	
Dibromofluoromethane (S)	109 %		80-123	10		08/12/09 21:32	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	10		08/12/09 21:32	460-00-4	
Toluene-d8 (S)	102 %		80-116	10		08/12/09 21:32	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-02	Lab ID: 5029062002	Collected: 08/06/09 09:15	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 06:59	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 06:59	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 06:59	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 06:59	75-35-4	
cis-1,2-Dichloroethene	<b>55.8</b>	ug/L	5.0	1		08/12/09 06:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 06:59	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 06:59	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 06:59	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 06:59	91-20-3	
Tetrachloroethene	<b>5.1</b>	ug/L	5.0	1		08/12/09 06:59	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 06:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 06:59	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 06:59	79-01-6	
Vinyl chloride	<b>56.2</b>	ug/L	2.0	1		08/12/09 06:59	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 06:59	1330-20-7	
Dibromofluoromethane (S)	111 %		80-123	1		08/12/09 06:59	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	1		08/12/09 06:59	460-00-4	
Toluene-d8 (S)	103 %		80-116	1		08/12/09 06:59	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-03S	Lab ID: 5029062003	Collected: 08/06/09 10:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>2340B Hardness, Total (Calc.)</b>	Analytical Method: SM 2340B							
Total Hardness	513	mg/L	1.0	1		08/19/09 08:41		
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/11/09 21:06	71-43-2	1d
Carbon tetrachloride	ND	ug/L	5.0	1		08/11/09 21:06	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/11/09 21:06	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/11/09 21:06	75-35-4	
cis-1,2-Dichloroethene	573	ug/L	50.0	10		08/11/09 22:47	156-59-2	
trans-1,2-Dichloroethene	25.0	ug/L	5.0	1		08/11/09 21:06	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/11/09 21:06	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/11/09 21:06	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/11/09 21:06	91-20-3	
Tetrachloroethene	30.6	ug/L	5.0	1		08/11/09 21:06	127-18-4	
Toluene	ND	ug/L	5.0	1		08/11/09 21:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/11/09 21:06	71-55-6	
Trichloroethene	8.2	ug/L	5.0	1		08/11/09 21:06	79-01-6	
Vinyl chloride	843	ug/L	20.0	10		08/11/09 22:47	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/11/09 21:06	1330-20-7	
Dibromofluoromethane (S)	79	%	80-123	1		08/11/09 21:06	1868-53-7	S0
4-Bromofluorobenzene (S)	102	%	70-126	1		08/11/09 21:06	460-00-4	
Toluene-d8 (S)	104	%	80-116	1		08/11/09 21:06	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 19:27		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	9.4	mg/L	5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-03D	Lab ID: 5029062004	Collected: 08/06/09 09:35	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 08:07	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 08:07	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 08:07	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 08:07	75-35-4	
cis-1,2-Dichloroethene	<b>16.7</b>	ug/L	5.0	1		08/12/09 08:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 08:07	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 08:07	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 08:07	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 08:07	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 08:07	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 08:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 08:07	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 08:07	79-01-6	
Vinyl chloride	<b>248</b>	ug/L	2.0	1		08/12/09 08:07	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 08:07	1330-20-7	
Dibromofluoromethane (S)	113 %		80-123	1		08/12/09 08:07	1868-53-7	
4-Bromofluorobenzene (S)	99 %		70-126	1		08/12/09 08:07	460-00-4	
Toluene-d8 (S)	102 %		80-116	1		08/12/09 08:07	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 19:26		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>32.1</b>	mg/L	5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-05	Lab ID: 5029062005	Collected: 08/06/09 10:20	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 08:41	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 08:41	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 08:41	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 08:41	75-35-4	
cis-1,2-Dichloroethene	15.1	ug/L	5.0	1		08/12/09 08:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 08:41	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 08:41	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 08:41	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 08:41	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 08:41	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 08:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 08:41	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 08:41	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/12/09 08:41	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 08:41	1330-20-7	
Dibromofluoromethane (S)	111 %		80-123	1		08/12/09 08:41	1868-53-7	
4-Bromofluorobenzene (S)	96 %		70-126	1		08/12/09 08:41	460-00-4	
Toluene-d8 (S)	102 %		80-116	1		08/12/09 08:41	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-06	Lab ID: 5029062006	Collected: 08/06/09 10:40	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 22:40	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 22:40	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 22:40	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 22:40	75-35-4	
cis-1,2-Dichloroethene	136	ug/L	5.0	1		08/12/09 22:40	156-59-2	
trans-1,2-Dichloroethene	14.3	ug/L	5.0	1		08/12/09 22:40	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 22:40	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 22:40	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 22:40	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 22:40	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 22:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 22:40	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 22:40	79-01-6	
Vinyl chloride	301	ug/L	20.0	10		08/13/09 19:25	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 22:40	1330-20-7	
Dibromofluoromethane (S)	111	%	80-123	1		08/12/09 22:40	1868-53-7	
4-Bromofluorobenzene (S)	99	%	70-126	1		08/12/09 22:40	460-00-4	
Toluene-d8 (S)	103	%	80-116	1		08/12/09 22:40	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 19:30		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	29.7	mg/L	5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-07	Lab ID: 5029062007	Collected: 08/06/09 11:20	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/11/09 18:16	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/11/09 18:16	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/11/09 18:16	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/11/09 18:16	75-35-4	
cis-1,2-Dichloroethene	<b>48.7</b>	ug/L	5.0	1		08/11/09 18:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 18:16	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/11/09 18:16	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/11/09 18:16	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/11/09 18:16	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/11/09 18:16	127-18-4	
Toluene	ND	ug/L	5.0	1		08/11/09 18:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/11/09 18:16	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/11/09 18:16	79-01-6	
Vinyl chloride	<b>787</b>	ug/L	20.0	10		08/11/09 18:50	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/11/09 18:16	1330-20-7	
Dibromofluoromethane (S)	95 %		80-123	1		08/11/09 18:16	1868-53-7	
4-Bromofluorobenzene (S)	101 %		70-126	1		08/11/09 18:16	460-00-4	
Toluene-d8 (S)	103 %		80-116	1		08/11/09 18:16	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-08	Lab ID: 5029062008	Collected: 08/06/09 11:45	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>2340B Hardness, Total (Calc.)</b>	Analytical Method: SM 2340B							
Total Hardness	<b>665</b> mg/L		1.0	1		08/19/09 08:47		
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND ug/L		50.0	10		08/12/09 23:14	71-43-2	
Carbon tetrachloride	ND ug/L		50.0	10		08/12/09 23:14	56-23-5	
Chloroform	ND ug/L		50.0	10		08/12/09 23:14	67-66-3	
1,1-Dichloroethene	ND ug/L		50.0	10		08/12/09 23:14	75-35-4	
cis-1,2-Dichloroethene	<b>601</b> ug/L		50.0	10		08/12/09 23:14	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		50.0	10		08/12/09 23:14	156-60-5	
Ethylbenzene	ND ug/L		50.0	10		08/12/09 23:14	100-41-4	
Methylene chloride	ND ug/L		50.0	10		08/12/09 23:14	75-09-2	
Naphthalene	ND ug/L		50.0	10		08/12/09 23:14	91-20-3	
Tetrachloroethene	ND ug/L		50.0	10		08/12/09 23:14	127-18-4	3d
Toluene	ND ug/L		50.0	10		08/12/09 23:14	108-88-3	
1,1,1-Trichloroethane	ND ug/L		50.0	10		08/12/09 23:14	71-55-6	
Trichloroethene	ND ug/L		50.0	10		08/12/09 23:14	79-01-6	2d,D4
Vinyl chloride	<b>8960</b> ug/L		100	50		08/12/09 23:48	75-01-4	
Xylene (Total)	ND ug/L		100	10		08/12/09 23:14	1330-20-7	
Dibromofluoromethane (S)	108 %		80-123	10		08/12/09 23:14	1868-53-7	
4-Bromofluorobenzene (S)	95 %		70-126	10		08/12/09 23:14	460-00-4	
Toluene-d8 (S)	103 %		80-116	10		08/12/09 23:14	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND mg/L		0.10	1		08/07/09 19:32		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>38.3</b> mg/L		5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-09S	Lab ID: 5029062009	Collected: 08/06/09 13:10	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 10:22	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 10:22	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 10:22	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:22	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 10:22	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 10:22	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 10:22	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 10:22	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 10:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 10:22	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 10:22	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/12/09 10:22	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 10:22	1330-20-7	
Dibromofluoromethane (S)	114 %		80-123	1		08/12/09 10:22	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	1		08/12/09 10:22	460-00-4	
Toluene-d8 (S)	104 %		80-116	1		08/12/09 10:22	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	<b>0.60</b>	mg/L	0.10	1		08/07/09 19:38		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>45.7</b>	mg/L	12.5	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-09D	Lab ID: 5029062010	Collected: 08/06/09 13:25	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/13/09 18:51	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/13/09 18:51	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/13/09 18:51	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/13/09 18:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/13/09 18:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/13/09 18:51	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/13/09 18:51	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/13/09 18:51	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/13/09 18:51	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/13/09 18:51	127-18-4	
Toluene	ND	ug/L	5.0	1		08/13/09 18:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/13/09 18:51	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/13/09 18:51	79-01-6	
Vinyl chloride	<b>80.8</b>	ug/L	2.0	1		08/13/09 18:51	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/13/09 18:51	1330-20-7	
Dibromofluoromethane (S)	100 %		80-123	1		08/13/09 18:51	1868-53-7	
4-Bromofluorobenzene (S)	100 %		70-126	1		08/13/09 18:51	460-00-4	
Toluene-d8 (S)	103 %		80-116	1		08/13/09 18:51	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-10S	Lab ID: 5029062011	Collected: 08/06/09 12:10	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND ug/L		5.0	1		08/13/09 00:22	71-43-2	
Carbon tetrachloride	ND ug/L		5.0	1		08/13/09 00:22	56-23-5	
Chloroform	ND ug/L		5.0	1		08/13/09 00:22	67-66-3	
1,1-Dichloroethene	ND ug/L		5.0	1		08/13/09 00:22	75-35-4	
cis-1,2-Dichloroethene	158 ug/L		5.0	1		08/13/09 00:22	156-59-2	
trans-1,2-Dichloroethene	16.1 ug/L		5.0	1		08/13/09 00:22	156-60-5	
Ethylbenzene	ND ug/L		5.0	1		08/13/09 00:22	100-41-4	
Methylene chloride	ND ug/L		5.0	1		08/13/09 00:22	75-09-2	
Naphthalene	ND ug/L		5.0	1		08/13/09 00:22	91-20-3	
Tetrachloroethene	ND ug/L		5.0	1		08/13/09 00:22	127-18-4	
Toluene	ND ug/L		5.0	1		08/13/09 00:22	108-88-3	
1,1,1-Trichloroethane	ND ug/L		5.0	1		08/13/09 00:22	71-55-6	
Trichloroethene	ND ug/L		5.0	1		08/13/09 00:22	79-01-6	
Vinyl chloride	395 ug/L		20.0	10		08/13/09 00:55	75-01-4	
Xylene (Total)	ND ug/L		10.0	1		08/13/09 00:22	1330-20-7	
Dibromofluoromethane (S)	108 %		80-123	1		08/13/09 00:22	1868-53-7	
4-Bromofluorobenzene (S)	102 %		70-126	1		08/13/09 00:22	460-00-4	
Toluene-d8 (S)	103 %		80-116	1		08/13/09 00:22	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND mg/L		0.10	1		08/07/09 19:33		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	ND mg/L		5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-P-10D	Lab ID: 5029062012	Collected: 08/06/09 11:55	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/13/09 04:20	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/13/09 04:20	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/13/09 04:20	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/13/09 04:20	75-35-4	
cis-1,2-Dichloroethene	<b>2520</b>	ug/L	250	50		08/13/09 20:33	156-59-2	
trans-1,2-Dichloroethene	<b>5.1</b>	ug/L	5.0	1		08/13/09 04:20	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/13/09 04:20	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/13/09 04:20	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/13/09 04:20	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/13/09 04:20	127-18-4	
Toluene	ND	ug/L	5.0	1		08/13/09 04:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/13/09 04:20	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/13/09 04:20	79-01-6	
Vinyl chloride	<b>3400</b>	ug/L	100	50		08/13/09 20:33	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/13/09 04:20	1330-20-7	
Dibromofluoromethane (S)	110 %		80-123	1		08/13/09 04:20	1868-53-7	
4-Bromofluorobenzene (S)	97 %		70-126	1		08/13/09 04:20	460-00-4	
Toluene-d8 (S)	101 %		80-116	1		08/13/09 04:20	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-C-01	Lab ID: 5029062013	Collected: 08/06/09 14:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/11/09 16:01	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/11/09 16:01	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/11/09 16:01	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/11/09 16:01	75-35-4	
cis-1,2-Dichloroethene	<b>66.9</b>	ug/L	5.0	1		08/11/09 16:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 16:01	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/11/09 16:01	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/11/09 16:01	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/11/09 16:01	91-20-3	
Tetrachloroethene	<b>84.8</b>	ug/L	5.0	1		08/11/09 16:01	127-18-4	
Toluene	ND	ug/L	5.0	1		08/11/09 16:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/11/09 16:01	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/11/09 16:01	79-01-6	
Vinyl chloride	<b>35.2</b>	ug/L	2.0	1		08/11/09 16:01	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/11/09 16:01	1330-20-7	
Dibromofluoromethane (S)	94 %		80-123	1		08/11/09 16:01	1868-53-7	
4-Bromofluorobenzene (S)	103 %		70-126	1		08/11/09 16:01	460-00-4	
Toluene-d8 (S)	103 %		80-116	1		08/11/09 16:01	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: MMW-C-02	Lab ID: 5029062014	Collected: 08/06/09 13:45	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/11/09 16:34	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/11/09 16:34	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/11/09 16:34	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/11/09 16:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 16:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 16:34	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/11/09 16:34	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/11/09 16:34	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/11/09 16:34	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/11/09 16:34	127-18-4	
Toluene	ND	ug/L	5.0	1		08/11/09 16:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/11/09 16:34	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/11/09 16:34	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/11/09 16:34	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/11/09 16:34	1330-20-7	
Dibromofluoromethane (S)	101 %		80-123	1		08/11/09 16:34	1868-53-7	
4-Bromofluorobenzene (S)	99 %		70-126	1		08/11/09 16:34	460-00-4	
Toluene-d8 (S)	102 %		80-116	1		08/11/09 16:34	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

Sample: DUP-1	Lab ID: 5029062015	Collected: 08/06/09 08:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>2340B Hardness, Total (Calc.)</b>	Analytical Method: SM 2340B							
Total Hardness	<b>647</b> mg/L		1.0	1		08/19/09 08:52		
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND ug/L		50.0	10		08/11/09 17:42	71-43-2	
Carbon tetrachloride	ND ug/L		50.0	10		08/11/09 17:42	56-23-5	
Chloroform	ND ug/L		50.0	10		08/11/09 17:42	67-66-3	
1,1-Dichloroethene	ND ug/L		50.0	10		08/11/09 17:42	75-35-4	
cis-1,2-Dichloroethene	<b>1040</b> ug/L		50.0	10		08/11/09 17:42	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		50.0	10		08/11/09 17:42	156-60-5	
Ethylbenzene	ND ug/L		50.0	10		08/11/09 17:42	100-41-4	
Methylene chloride	ND ug/L		50.0	10		08/11/09 17:42	75-09-2	
Naphthalene	ND ug/L		50.0	10		08/11/09 17:42	91-20-3	
Tetrachloroethene	ND ug/L		50.0	10		08/11/09 17:42	127-18-4	3d
Toluene	ND ug/L		50.0	10		08/11/09 17:42	108-88-3	
1,1,1-Trichloroethane	ND ug/L		50.0	10		08/11/09 17:42	71-55-6	
Trichloroethene	ND ug/L		50.0	10		08/11/09 17:42	79-01-6	2d,D4
Vinyl chloride	<b>9410</b> ug/L		200	100		08/13/09 05:28	75-01-4	
Xylene (Total)	ND ug/L		100	10		08/11/09 17:42	1330-20-7	
Dibromofluoromethane (S)	91 %		80-123	10		08/11/09 17:42	1868-53-7	
4-Bromofluorobenzene (S)	102 %		70-126	10		08/11/09 17:42	460-00-4	
Toluene-d8 (S)	103 %		80-116	10		08/11/09 17:42	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND mg/L		0.10	1		08/07/09 19:25		
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>38.0</b> mg/L		5.0	1		08/12/09 10:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

Sample: DUP-2	Lab ID: 5029062016	Collected: 08/06/09 08:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	10		08/13/09 01:29	71-43-2	
Carbon tetrachloride	ND	ug/L	50.0	10		08/13/09 01:29	56-23-5	
Chloroform	ND	ug/L	50.0	10		08/13/09 01:29	67-66-3	
1,1-Dichloroethene	ND	ug/L	50.0	10		08/13/09 01:29	75-35-4	
cis-1,2-Dichloroethene	<b>2910</b>	ug/L	50.0	10		08/13/09 01:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	50.0	10		08/13/09 01:29	156-60-5	
Ethylbenzene	ND	ug/L	50.0	10		08/13/09 01:29	100-41-4	
Methylene chloride	ND	ug/L	50.0	10		08/13/09 01:29	75-09-2	
Naphthalene	ND	ug/L	50.0	10		08/13/09 01:29	91-20-3	
Tetrachloroethene	ND	ug/L	50.0	10		08/13/09 01:29	127-18-4	3d
Toluene	ND	ug/L	50.0	10		08/13/09 01:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	50.0	10		08/13/09 01:29	71-55-6	
Trichloroethene	ND	ug/L	50.0	10		08/13/09 01:29	79-01-6	2d,D4
Vinyl chloride	<b>3700</b>	ug/L	200	100		08/13/09 19:59	75-01-4	
Xylene (Total)	ND	ug/L	100	10		08/13/09 01:29	1330-20-7	
Dibromofluoromethane (S)	111 %		80-123	10		08/13/09 01:29	1868-53-7	
4-Bromofluorobenzene (S)	96 %		70-126	10		08/13/09 01:29	460-00-4	
Toluene-d8 (S)	103 %		80-116	10		08/13/09 01:29	2037-26-5	

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Sample: Trip Blank	Lab ID: 5029062017	Collected: 08/06/09 08:00	Received: 08/07/09 10:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/11/09 17:08	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/11/09 17:08	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/11/09 17:08	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/11/09 17:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 17:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/11/09 17:08	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/11/09 17:08	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/11/09 17:08	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/11/09 17:08	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/11/09 17:08	127-18-4	
Toluene	ND	ug/L	5.0	1		08/11/09 17:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/11/09 17:08	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/11/09 17:08	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/11/09 17:08	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/11/09 17:08	1330-20-7	
Dibromofluoromethane (S)	104 %		80-123	1		08/11/09 17:08	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	1		08/11/09 17:08	460-00-4	
Toluene-d8 (S)	101 %		80-116	1		08/11/09 17:08	2037-26-5	

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch: WETA/3994 Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.

Associated Lab Samples: 5029062003, 5029062004, 5029062006, 5029062008, 5029062009, 5029062011, 5029062015

METHOD BLANK: 331038 Matrix: Water

Associated Lab Samples: 5029062003, 5029062004, 5029062006, 5029062008, 5029062009, 5029062011, 5029062015

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Nitrogen, Nitrate	mg/L	ND	0.10	08/07/09 19:22	

LABORATORY CONTROL SAMPLE: 331039

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Nitrogen, Nitrate	mg/L	1	0.96	96	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 331040 331041

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max		
		5029062003	Spike	Spike	Spike	Result	Result	% Rec	% Rec	RPD	RPD	Qual
Nitrogen, Nitrate	mg/L	ND	1	1	1	0.87	0.84	80	77	90-110	3	20 M3

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 331042 331043

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max		
		5029042012	Spike	Spike	Spike	Result	Result	% Rec	% Rec	RPD	RPD	Qual
Nitrogen, Nitrate	mg/L	ND	1	1	1	0.93	0.95	88	90	90-110	3	20 M0

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch: WETA/4002 Analysis Method: ASTM D516-90,02

QC Batch Method: ASTM D516-90,02 Analysis Description: ASTM D516-9002 Sulfate Water

Associated Lab Samples: 5029062003, 5029062004, 5029062006, 5029062008, 5029062009, 5029062011, 5029062015

METHOD BLANK: 331922 Matrix: Water

Associated Lab Samples: 5029062003, 5029062004, 5029062006, 5029062008, 5029062009, 5029062011, 5029062015

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Sulfate	mg/L	ND	5.0	08/12/09 10:40	

LABORATORY CONTROL SAMPLE: 331923

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Sulfate	mg/L	20	20.1	100	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 331924 331925

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		5029062003	Spike										
Sulfate	mg/L	9.4	20	20	31.4	31.7	110	112	75-125	1	20		

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch:	MSV/17921	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5029062002, 5029062004, 5029062005, 5029062009		

METHOD BLANK: 332052   Matrix: Water

Associated Lab Samples: 5029062002, 5029062004, 5029062005, 5029062009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/12/09 01:20	
1,1-Dichloroethene	ug/L	ND	5.0	08/12/09 01:20	
Benzene	ug/L	ND	5.0	08/12/09 01:20	
Carbon tetrachloride	ug/L	ND	5.0	08/12/09 01:20	
Chloroform	ug/L	ND	5.0	08/12/09 01:20	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 01:20	
Ethylbenzene	ug/L	ND	5.0	08/12/09 01:20	
Methylene chloride	ug/L	ND	5.0	08/12/09 01:20	
Naphthalene	ug/L	ND	5.0	08/12/09 01:20	
Tetrachloroethene	ug/L	ND	5.0	08/12/09 01:20	
Toluene	ug/L	ND	5.0	08/12/09 01:20	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 01:20	
Trichloroethene	ug/L	ND	5.0	08/12/09 01:20	
Vinyl chloride	ug/L	ND	2.0	08/12/09 01:20	
Xylene (Total)	ug/L	ND	10.0	08/12/09 01:20	
4-Bromofluorobenzene (S)	%	100	70-126	08/12/09 01:20	
Dibromofluoromethane (S)	%	112	80-123	08/12/09 01:20	
Toluene-d8 (S)	%	102	80-116	08/12/09 01:20	

LABORATORY CONTROL SAMPLE: 332053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	57.8	116	69-136	
1,1-Dichloroethene	ug/L	50	58.2	116	63-128	
Benzene	ug/L	50	52.8	106	78-127	
Carbon tetrachloride	ug/L	50	62.4	125	62-143	
Chloroform	ug/L	50	58.8	118	74-131	
cis-1,2-Dichloroethene	ug/L	50	58.0	116	74-128	
Ethylbenzene	ug/L	50	52.1	104	81-126	
Methylene chloride	ug/L	50	53.1	106	32-164	
Naphthalene	ug/L	50	57.9	116	61-135	
Tetrachloroethene	ug/L	50	51.9	104	60-119	
Toluene	ug/L	50	59.0	118	75-129	
trans-1,2-Dichloroethene	ug/L	50	60.3	121	71-126	
Trichloroethene	ug/L	50	56.6	113	74-130	
Vinyl chloride	ug/L	50	51.2	102	55-141	
Xylene (Total)	ug/L	150	173	115	76-132	
4-Bromofluorobenzene (S)	%			100	70-126	
Dibromofluoromethane (S)	%			98	80-123	
Toluene-d8 (S)	%			101	80-116	

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Parameter	Units	5029062005		MS		MSD		MS		MSD		% Rec	Limits	Max	
		Result	Conc.	Spike	Conc.	MS	Result	MSD	Result	% Rec	MSD			RPD	RPD
1,1,1-Trichloroethane	ug/L	ND	50	50	56.1	59.7	112	119	64-143	6	20				
1,1-Dichloroethene	ug/L	ND	50	50	59.5	60.7	119	121	55-140	2	20				
Benzene	ug/L	ND	50	50	47.8	51.8	96	104	63-141	8	20				
Carbon tetrachloride	ug/L	ND	50	50	58.5	62.9	117	126	54-145	7	20				
Chloroform	ug/L	ND	50	50	55.2	58.7	110	117	67-134	6	20				
cis-1,2-Dichloroethene	ug/L	15.1	50	50	68.9	72.8	108	115	65-132	5	20				
Ethylbenzene	ug/L	ND	50	50	47.2	50.3	94	101	44-151	6	20				
Methylene chloride	ug/L	ND	50	50	50.4	52.3	101	105	46-154	4	20				
Naphthalene	ug/L	ND	50	50	25.1	44.7	50	89	44-138	56	20	R1			
Tetrachloroethene	ug/L	ND	50	50	46.7	51.0	93	102	25-146	9	20				
Toluene	ug/L	ND	50	50	53.3	58.2	107	116	59-142	9	20				
trans-1,2-Dichloroethene	ug/L	ND	50	50	60.4	63.2	121	126	60-137	5	20				
Trichloroethene	ug/L	ND	50	50	51.2	55.6	102	111	61-137	8	20				
Vinyl chloride	ug/L	ND	50	50	55.7	56.6	110	112	51-144	2	20				
Xylene (Total)	ug/L	ND	150	150	155	168	103	112	44-152	8	20				
4-Bromofluorobenzene (S)	%						101	99	70-126		20				
Dibromofluoromethane (S)	%							98	96	80-123		20			
Toluene-d8 (S)	%							101	100	80-116		20			

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## **QUALITY CONTROL DATA**

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch: MSV/17923 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV  
Associated Lab Samples: 5029062003, 5029062007, 5029062013, 5029062014, 5029062015, 5029062017

METHOD BLANK: 332066 Matrix: Water

**Associated Lab Samples:** 5029062003, 5029062007, 5029062013, 5029062014, 5029062015, 5029062017

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
1,1,1-Trichloroethane	ug/L	ND	5.0	08/11/09 12:36	
1,1-Dichloroethene	ug/L	ND	5.0	08/11/09 12:36	
Benzene	ug/L	ND	5.0	08/11/09 12:36	
Carbon tetrachloride	ug/L	ND	5.0	08/11/09 12:36	
Chloroform	ug/L	ND	5.0	08/11/09 12:36	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/11/09 12:36	
Ethylbenzene	ug/L	ND	5.0	08/11/09 12:36	
Methylene chloride	ug/L	ND	5.0	08/11/09 12:36	
Naphthalene	ug/L	ND	5.0	08/11/09 12:36	
Tetrachloroethene	ug/L	ND	5.0	08/11/09 12:36	
Toluene	ug/L	ND	5.0	08/11/09 12:36	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/11/09 12:36	
Trichloroethene	ug/L	ND	5.0	08/11/09 12:36	
Vinyl chloride	ug/L	ND	2.0	08/11/09 12:36	
Xylene (Total)	ug/L	ND	10.0	08/11/09 12:36	
4-Bromofluorobenzene (S)	%	101	70-126	08/11/09 12:36	
Dibromofluoromethane (S)	%	110	80-123	08/11/09 12:36	
Toluene-d8 (S)	%	103	80-116	08/11/09 12:36	

LABORATORY CONTROL SAMPLE: 332067

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.1	112	69-136	
1,1-Dichloroethene	ug/L	50	55.0	110	63-128	
Benzene	ug/L	50	51.4	103	78-127	
Carbon tetrachloride	ug/L	50	61.8	124	62-143	
Chloroform	ug/L	50	54.2	108	74-131	
cis-1,2-Dichloroethene	ug/L	50	51.3	103	74-128	
Ethylbenzene	ug/L	50	52.6	105	81-126	
Methylene chloride	ug/L	50	50.2	100	32-164	
Naphthalene	ug/L	50	32.8	66	61-135	
Tetrachloroethene	ug/L	50	50.8	102	60-119	
Toluene	ug/L	50	48.7	97	75-129	
trans-1,2-Dichloroethene	ug/L	50	55.9	112	71-126	
Trichloroethene	ug/L	50	52.6	105	74-130	
Vinyl chloride	ug/L	50	51.8	104	55-141	
Xylene (Total)	ug/L	150	157	104	76-132	
4-Bromofluorobenzene (S)	%			102	70-126	
Dibromofluoromethane (S)	%			109	80-123	
Toluene-d8 (S)	%			101	80-116	

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Parameter	Units	5029062003		MS		MSD		MS		MSD		% Rec		Max	
		Result	Conc.	Spike	Conc.	Result	MSD	Result	% Rec	MSD	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	53.0	55.6	106	111	64-143	5	20				
1,1-Dichloroethene	ug/L	ND	50	50	54.6	53.7	109	107	55-140	2	20				
Benzene	ug/L	ND	50	50	49.5	50.0	99	100	63-141	.9	20				
Carbon tetrachloride	ug/L	ND	50	50	56.9	59.6	114	119	54-145	5	20				
Chloroform	ug/L	ND	50	50	51.9	54.5	104	109	67-134	5	20				
cis-1,2-Dichloroethene	ug/L	573	50	50	569	533	-9	-81	65-132	7	20	M0			
Ethylbenzene	ug/L	ND	50	50	49.1	51.0	98	102	44-151	4	20				
Methylene chloride	ug/L	ND	50	50	48.3	48.3	97	97	46-154	.03	20				
Naphthalene	ug/L	ND	50	50	41.7	43.7	83	87	44-138	5	20				
Tetrachloroethene	ug/L	30.6	50	50	81.5	81.9	102	103	25-146	.5	20				
Toluene	ug/L	ND	50	50	47.1	47.9	94	95	59-142	2	20				
trans-1,2-Dichloroethene	ug/L	25.0	50	50	80.6	79.6	111	109	60-137	1	20				
Trichloroethene	ug/L	8.2	50	50	60.6	60.4	105	104	61-137	.3	20				
Vinyl chloride	ug/L	843	50	50	818	826	-49	-33	51-144	1	20	M0			
Xylene (Total)	ug/L	ND	150	150	146	152	98	101	44-152	4	20				
4-Bromofluorobenzene (S)	%						99	101	70-126		20				
Dibromofluoromethane (S)	%						100	107	80-123		20				
Toluene-d8 (S)	%						99	99	80-116		20				

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch: MSV/17947 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV

Associated Lab Samples: 5029062001, 5029062006, 5029062008, 5029062011, 5029062016

METHOD BLANK: 332533 Matrix: Water

Associated Lab Samples: 5029062001, 5029062006, 5029062008, 5029062011, 5029062016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/12/09 15:20	
1,1-Dichloroethene	ug/L	ND	5.0	08/12/09 15:20	
Benzene	ug/L	ND	5.0	08/12/09 15:20	
Carbon tetrachloride	ug/L	ND	5.0	08/12/09 15:20	
Chloroform	ug/L	ND	5.0	08/12/09 15:20	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 15:20	
Ethylbenzene	ug/L	ND	5.0	08/12/09 15:20	
Methylene chloride	ug/L	ND	5.0	08/12/09 15:20	
Naphthalene	ug/L	ND	5.0	08/12/09 15:20	
Tetrachloroethene	ug/L	ND	5.0	08/12/09 15:20	
Toluene	ug/L	ND	5.0	08/12/09 15:20	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 15:20	
Trichloroethene	ug/L	ND	5.0	08/12/09 15:20	
Vinyl chloride	ug/L	ND	2.0	08/12/09 15:20	
Xylene (Total)	ug/L	ND	10.0	08/12/09 15:20	
4-Bromofluorobenzene (S)	%	99	70-126	08/12/09 15:20	
Dibromofluoromethane (S)	%	113	80-123	08/12/09 15:20	
Toluene-d8 (S)	%	103	80-116	08/12/09 15:20	

LABORATORY CONTROL SAMPLE: 332534

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	57.5	115	69-136	
1,1-Dichloroethene	ug/L	50	58.5	117	63-128	
Benzene	ug/L	50	50.6	101	78-127	
Carbon tetrachloride	ug/L	50	62.5	125	62-143	
Chloroform	ug/L	50	56.5	113	74-131	
cis-1,2-Dichloroethene	ug/L	50	55.3	111	74-128	
Ethylbenzene	ug/L	50	50.6	101	81-126	
Methylene chloride	ug/L	50	53.0	106	32-164	
Naphthalene	ug/L	50	39.8	80	61-135	
Tetrachloroethene	ug/L	50	51.9	104	60-119	
Toluene	ug/L	50	57.3	115	75-129	
trans-1,2-Dichloroethene	ug/L	50	58.7	117	71-126	
Trichloroethene	ug/L	50	55.8	112	74-130	
Vinyl chloride	ug/L	50	55.3	111	55-141	
Xylene (Total)	ug/L	150	168	112	76-132	
4-Bromofluorobenzene (S)	%			100	70-126	
Dibromofluoromethane (S)	%			97	80-123	
Toluene-d8 (S)	%			101	80-116	

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

Parameter	Units	5029032004		MS Spike		MSD Spike		MS Result		MSD Result		% Rec		Max	
		Result	Conc.	Conc.	MSD	MS	MS	Result	% Rec	MSD	MS	% Rec	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	60.5	58.9	121	118	64-143	3	20				
1,1-Dichloroethene	ug/L	ND	50	50	62.6	61.1	125	122	55-140	2	20				
Benzene	ug/L	ND	50	50	51.4	49.9	103	100	63-141	3	20				
Carbon tetrachloride	ug/L	ND	50	50	65.1	64.1	130	128	54-145	2	20				
Chloroform	ug/L	ND	50	50	59.5	58.6	119	117	67-134	2	20				
cis-1,2-Dichloroethene	ug/L	ND	50	50	57.4	55.8	115	112	65-132	3	20				
Ethylbenzene	ug/L	ND	50	50	51.6	49.6	103	99	44-151	4	20				
Methylene chloride	ug/L	ND	50	50	53.1	53.0	106	106	46-154	.2	20				
Naphthalene	ug/L	ND	50	50	30.1	36.1	60	72	44-138	18	20				
Tetrachloroethene	ug/L	ND	50	50	51.8	49.8	104	100	25-146	4	20				
Toluene	ug/L	ND	50	50	57.2	55.4	114	111	59-142	3	20				
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.4	61.5	125	123	60-137	1	20				
Trichloroethene	ug/L	ND	50	50	56.7	55.0	113	110	61-137	3	20				
Vinyl chloride	ug/L	ND	50	50	59.2	55.7	118	111	51-144	6	20				
Xylene (Total)	ug/L	ND	150	150	169	162	113	108	44-152	4	20				
4-Bromofluorobenzene (S)	%							100	101	70-126		20			
Dibromofluoromethane (S)	%								97	99	80-123		20		
Toluene-d8 (S)	%								99	100	80-116		20		

## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch:	MSV/17948	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5029062012		

METHOD BLANK: 332538    Matrix: Water

Associated Lab Samples: 5029062012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/13/09 03:45	
1,1-Dichloroethene	ug/L	ND	5.0	08/13/09 03:45	
Benzene	ug/L	ND	5.0	08/13/09 03:45	
Carbon tetrachloride	ug/L	ND	5.0	08/13/09 03:45	
Chloroform	ug/L	ND	5.0	08/13/09 03:45	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/13/09 03:45	
Ethylbenzene	ug/L	ND	5.0	08/13/09 03:45	
Methylene chloride	ug/L	ND	5.0	08/13/09 03:45	
Naphthalene	ug/L	ND	5.0	08/13/09 03:45	
Tetrachloroethene	ug/L	ND	5.0	08/13/09 03:45	
Toluene	ug/L	ND	5.0	08/13/09 03:45	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/13/09 03:45	
Trichloroethene	ug/L	ND	5.0	08/13/09 03:45	
Vinyl chloride	ug/L	ND	2.0	08/13/09 03:45	
Xylene (Total)	ug/L	ND	10.0	08/13/09 03:45	
4-Bromofluorobenzene (S)	%	98	70-126	08/13/09 03:45	
Dibromofluoromethane (S)	%	113	80-123	08/13/09 03:45	
Toluene-d8 (S)	%	102	80-116	08/13/09 03:45	

LABORATORY CONTROL SAMPLE: 332539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	58.4	117	69-136	
1,1-Dichloroethene	ug/L	50	57.2	114	63-128	
Benzene	ug/L	50	52.6	105	78-127	
Carbon tetrachloride	ug/L	50	62.9	126	62-143	
Chloroform	ug/L	50	58.5	117	74-131	
cis-1,2-Dichloroethene	ug/L	50	58.1	116	74-128	
Ethylbenzene	ug/L	50	52.4	105	81-126	
Methylene chloride	ug/L	50	53.3	107	32-164	
Naphthalene	ug/L	50	45.0	90	61-135	
Tetrachloroethene	ug/L	50	53.0	106	60-119	
Toluene	ug/L	50	59.4	119	75-129	
trans-1,2-Dichloroethene	ug/L	50	61.5	123	71-126	
Trichloroethene	ug/L	50	56.8	114	74-130	
Vinyl chloride	ug/L	50	54.1	108	55-141	
Xylene (Total)	ug/L	150	173	116	76-132	
4-Bromofluorobenzene (S)	%			101	70-126	
Dibromofluoromethane (S)	%			96	80-123	
Toluene-d8 (S)	%			101	80-116	

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029062

QC Batch:	MSV/17981	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5029062010		

METHOD BLANK: 333435                                  Matrix: Water

Associated Lab Samples: 5029062010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/13/09 18:18	
1,1-Dichloroethene	ug/L	ND	5.0	08/13/09 18:18	
Benzene	ug/L	ND	5.0	08/13/09 18:18	
Carbon tetrachloride	ug/L	ND	5.0	08/13/09 18:18	
Chloroform	ug/L	ND	5.0	08/13/09 18:18	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/13/09 18:18	
Ethylbenzene	ug/L	ND	5.0	08/13/09 18:18	
Methylene chloride	ug/L	ND	5.0	08/13/09 18:18	
Naphthalene	ug/L	ND	5.0	08/13/09 18:18	
Tetrachloroethene	ug/L	ND	5.0	08/13/09 18:18	
Toluene	ug/L	ND	5.0	08/13/09 18:18	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/13/09 18:18	
Trichloroethene	ug/L	ND	5.0	08/13/09 18:18	
Vinyl chloride	ug/L	ND	2.0	08/13/09 18:18	
Xylene (Total)	ug/L	ND	10.0	08/13/09 18:18	
4-Bromofluorobenzene (S)	%	100	70-126	08/13/09 18:18	
Dibromofluoromethane (S)	%	106	80-123	08/13/09 18:18	
Toluene-d8 (S)	%	103	80-116	08/13/09 18:18	

LABORATORY CONTROL SAMPLE: 333436

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	52.9	106	69-136	
1,1-Dichloroethene	ug/L	50	55.6	111	63-128	
Benzene	ug/L	50	50.1	100	78-127	
Carbon tetrachloride	ug/L	50	51.3	103	62-143	
Chloroform	ug/L	50	57.0	114	74-131	
cis-1,2-Dichloroethene	ug/L	50	53.5	107	74-128	
Ethylbenzene	ug/L	50	52.1	104	81-126	
Methylene chloride	ug/L	50	55.6	111	32-164	
Naphthalene	ug/L	50	52.1	104	61-135	
Tetrachloroethene	ug/L	50	51.3	103	60-119	
Toluene	ug/L	50	50.9	102	75-129	
trans-1,2-Dichloroethene	ug/L	50	59.4	119	71-126	
Trichloroethene	ug/L	50	54.7	109	74-130	
Vinyl chloride	ug/L	50	50.2	100	55-141	
Xylene (Total)	ug/L	150	160	107	76-132	
4-Bromofluorobenzene (S)	%			100	70-126	
Dibromofluoromethane (S)	%			108	80-123	
Toluene-d8 (S)	%			100	80-116	

Date: 08/21/2009 02:52 PM

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Michigan Plaza/M01046  
Pace Project No.: 5029062

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

### ANALYTE QUALIFIERS

- 1d All target compound results confirmed by a second analysis conducted outside the holding time. AMV 8-21-09
- 2d Evaluated to 5 ug/L per MDL. AMV 8-13-09
- 3d Evaluated to 5.8 ug/L per MDL. AMV 8-13-09
- D4 Sample was diluted due to the presence of high levels of target analytes.
- J Analyte detected below reporting limit, therefore result is an estimate.
- M0 Matrix spike recovery was outside laboratory control limits.
- M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.
- R1 RPD value was outside control limits.
- S0 Surrogate recovery outside laboratory control limits.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a **LEGAL DOCUMENT**. All relevant fields must be completed accurately.



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**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Important Note:** By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices NOT paid within 30 days.

## Sample Condition Upon Receipt

Pace Analytical

Client Name: MundeeProject # 5029062Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Optional  
Proj Due Date:  
Proj Name:Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noPacking Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_Thermometer Used 123456 Type of Ice: Wet Blue None  Samples on ice, cooling process has begunCooler Temperature 2.4°CBiological Tissue Is Frozen: Yes  NoComments: \_\_\_\_\_ Date and Initials of person examining contents: 8/7/09 mg

Temp should be above freezing to 6°C

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>Nitrate</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. DID NOT RECEIVE 6 VOA'S See below
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

## Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution:

on mmw P 08 - COC shows 6 only rec'd 3 VOA's 40ml amber  
mmw P 10 D - COC shows 6 only rec'd 3 VOA's 40ml amber

Project Manager Review:

Jma SayerDate: 8/7/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

# Sample Container Count

CLIENT: Nandell

Pace Analytical

COC PAGE / of 2  
COC ID# 1247469

Project # 029002

## Sample Line

Item	DG9H	AG1U	WGFU	R 4/6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1	3												
2	3												
3	9												
4	3												
5	6												
6	3												
7	3												
8	3												
9	3												
10	3												
11	3												
12	3												

## Container Codes

DG9H	40mL HCl amber vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	BP1S	1 liter H2SO4 plastic	BP1U	1 liter unpreserved plastic	BP2A	500mL NaOH, Asc Acid plastic	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial		
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H2SO4 plastic	BP1T	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	BP1Z	1 liter NaOH, Zn, Ac	BP2A	500mL NaOH, Asc Acid plastic	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial
WGFU	4oz clear scii jar	AG1S	1 liter H2SO4 amber glass	BP1T	1 liter Na Thiosulfate amber gl	BP1U	1 liter unpreserved plastic	BP1Z	1 liter NaOH, Zn, Ac	BP2A	500mL NaOH, Asc Acid plastic	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial		
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1U	1 liter unpreserved plastic	BP1Z	1 liter NaOH, Zn, Ac	BP2A	500mL NaOH, Asc Acid plastic	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial				
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP1Z	1 liter Na Thiosulfate amber gl	BP2A	500mL NaOH, Asc Acid plastic	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial						
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2U	500mL unpreserved amber gla	BP3A	250mL NaOH, Asc Acid plastic	BP3C	250mL NaOH plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP4H	40mL HCl clear vial	BP4T	40mL Na Thio. clear vial	BP4U	40mL unpreserved clear vial												
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP3N	250mL HNO3 plastic	BP3U	250mL unpreserved plastic	BP3S	250mL H2SO4 plastic	BP4S	500mL NaOH, Asc Acid plastic	BP4T	500mL NaOH, Asc Acid plastic	BP4U	500mL NaOH, Asc Acid plastic														
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3U	250mL unpreserved plastic	BP3S	250mL H2SO4 plastic	BP4S	500mL NaOH, Asc Acid plastic	BP4T	500mL NaOH, Asc Acid plastic	BP4U	500mL NaOH, Asc Acid plastic																
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3T	1 liter Na Thiosulfate clear gla	BP4S	500mL NaOH, Asc Acid plastic	BP4T	500mL NaOH, Asc Acid plastic	BP4U	500mL NaOH, Asc Acid plastic																		
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP4S	500mL NaOH, Asc Acid plastic	BP4T	500mL NaOH, Asc Acid plastic	BP4U	500mL NaOH, Asc Acid plastic																				
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	BP4U	500mL NaOH, Asc Acid plastic																								
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass																										
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic																										

COC says 6 only need 3

CLIENT: Mundell & Associates

### Sample Container Count



COC PAGE 2 of 2  
COC ID# 1247470

Project # A99062

#### Sample Line

Item	DG9H	AG1U	WGFU	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1	3												
2	3												
3	3			/									
4	3												
5	3												
6													
7													
8													
9													
10													
11													
12													

#### Container Codes

DG9H	40ml. HCl amber vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	DG9P	40ml TSP amber vial
AG1U	1 liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H <sub>2</sub> SO <sub>4</sub> plastic	DG9S	40mL H <sub>2</sub> SO <sub>4</sub> amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H <sub>2</sub> SCo4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	Terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40ml unpreserved <b>amber</b> vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	1 Wipe/Swab	
BP2U	500mL unpreserved plastic	AG2S	500mL H <sub>2</sub> SO <sub>4</sub> amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H <sub>2</sub> SO <sub>4</sub> plastic	AG2U	500ml unpreserved amber gla	BP2Z	500ml. NaOH, Zn, Ac	U Summa Can	
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3A	250mL NaOH, Asc Acid plastic	VG9H	40mL HCl clear vial
BP3U	250mL unpreserved plastic	BP1H	1 filter HCl clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H <sub>2</sub> SO <sub>4</sub> plastic	BP1S	1 liter H <sub>2</sub> SCo4 clear glass	BP3Z	250ml. NaOH, Zn Ac plastic	VGGU	40ml unpreserved clear vial
AG3S	250mL H <sub>2</sub> SO <sub>4</sub> glass amber	BP1T	1 liter Na Thiosulfate clear gla	C Air Cassettes		VSG	Headspace septa vial & HCl
AG1S	1 liter H <sub>2</sub> SCo4 amber glass	BP1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

August 13, 2009

Leena Lothe  
Mundell & Associates, Inc.  
110 South Downey Avenue  
Indianapolis, IN 46219

RE: Project: Michigan Plaza/M01046  
Pace Project No.: 5029085

Dear Leena Lothe:

Enclosed are the analytical results for sample(s) received by the laboratory on August 07, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Illinois/NELAC Certification #: 100418  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042  
Ohio VAP: CL0065  
Pennsylvania: 68-00791  
West Virginia Certification #: 330

Enclosures

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Michigan Plaza/M01046  
 Pace Project No.: 5029085

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5029085001	<b>MW-168S</b>	Water	08/07/09 11:25	08/07/09 15:58
5029085002	<b>MW-168D</b>	Water	08/07/09 10:45	08/07/09 15:58
5029085003	<b>MMW-P-04</b>	Water	08/07/09 12:00	08/07/09 15:58
5029085004	<b>Trip Blank</b>	Water	08/07/09 08:00	08/07/09 15:58
5029085005	<b>EB</b>	Water	08/07/09 12:00	08/07/09 15:58

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Michigan Plaza/M01046  
 Pace Project No.: 5029085

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5029085001	MW-168S	EPA 8260	SLB	18
5029085002	MW-168D	EPA 353.2	CLS	1
		EPA 8260	SLB	18
5029085003	MMW-P-04	EPA 8260	SLB	18
5029085004	Trip Blank	EPA 8260	SLB	18
5029085005	EB	EPA 8260	SLB	18

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

Sample: MW-168S	Lab ID: 5029085001	Collected: 08/07/09 11:25	Received: 08/07/09 15:58	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 10:11	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 10:11	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 10:11	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:11	75-35-4	
cis-1,2-Dichloroethene	<b>118</b>	ug/L	5.0	1		08/12/09 10:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:11	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 10:11	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 10:11	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 10:11	91-20-3	
Tetrachloroethene	<b>62.6</b>	ug/L	5.0	1		08/12/09 10:11	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 10:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 10:11	71-55-6	
Trichloroethene	<b>10.2</b>	ug/L	5.0	1		08/12/09 10:11	79-01-6	
Vinyl chloride	<b>9.9</b>	ug/L	2.0	1		08/12/09 10:11	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 10:11	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	1		08/12/09 10:11	1868-53-7	
4-Bromofluorobenzene (S)	100 %		70-126	1		08/12/09 10:11	460-00-4	
Toluene-d8 (S)	100 %		80-116	1		08/12/09 10:11	2037-26-5	

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

Sample: MW-168D	Lab ID: 5029085002	Collected: 08/07/09 10:45	Received: 08/07/09 15:58	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 10:40	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 10:40	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 10:40	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 10:40	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 10:40	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 10:40	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 10:40	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 10:40	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 10:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 10:40	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 10:40	79-01-6	
Vinyl chloride	36.2	ug/L	2.0	1		08/12/09 10:40	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 10:40	1330-20-7	
Dibromofluoromethane (S)	98 %		80-123	1		08/12/09 10:40	1868-53-7	
4-Bromofluorobenzene (S)	101 %		70-126	1		08/12/09 10:40	460-00-4	
Toluene-d8 (S)	94 %		80-116	1		08/12/09 10:40	2037-26-5	
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		08/07/09 19:42		

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

Sample: MMW-P-04	Lab ID: 5029085003	Collected: 08/07/09 12:00	Received: 08/07/09 15:58	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 11:10	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 11:10	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 11:10	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 11:10	75-35-4	
cis-1,2-Dichloroethene	<b>1870</b>	ug/L	250	50		08/13/09 03:43	156-59-2	
trans-1,2-Dichloroethene	<b>36.7</b>	ug/L	5.0	1		08/12/09 11:10	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 11:10	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 11:10	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 11:10	91-20-3	
Tetrachloroethene	<b>23.5</b>	ug/L	5.0	1		08/12/09 11:10	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 11:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 11:10	71-55-6	
Trichloroethene	<b>11.0</b>	ug/L	5.0	1		08/12/09 11:10	79-01-6	
Vinyl chloride	<b>2.2</b>	ug/L	2.0	1		08/12/09 11:10	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 11:10	1330-20-7	
Dibromofluoromethane (S)	98 %		80-123	1		08/12/09 11:10	1868-53-7	
4-Bromofluorobenzene (S)	100 %		70-126	1		08/12/09 11:10	460-00-4	
Toluene-d8 (S)	100 %		80-116	1		08/12/09 11:10	2037-26-5	

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

Sample: Trip Blank	Lab ID: 5029085004	Collected: 08/07/09 08:00	Received: 08/07/09 15:58	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 11:40	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 11:40	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 11:40	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 11:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 11:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 11:40	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 11:40	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 11:40	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 11:40	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 11:40	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 11:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 11:40	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 11:40	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/12/09 11:40	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 11:40	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	1		08/12/09 11:40	1868-53-7	
4-Bromofluorobenzene (S)	99 %		70-126	1		08/12/09 11:40	460-00-4	
Toluene-d8 (S)	91 %		80-116	1		08/12/09 11:40	2037-26-5	

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Michigan Plaza/M01046  
Pace Project No.: 5029085

Sample: EB	Lab ID: 5029085005	Collected: 08/07/09 12:00	Received: 08/07/09 15:58	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		08/12/09 12:09	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		08/12/09 12:09	56-23-5	
Chloroform	ND	ug/L	5.0	1		08/12/09 12:09	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		08/12/09 12:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 12:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		08/12/09 12:09	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		08/12/09 12:09	100-41-4	
Methylene chloride	ND	ug/L	5.0	1		08/12/09 12:09	75-09-2	
Naphthalene	ND	ug/L	5.0	1		08/12/09 12:09	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		08/12/09 12:09	127-18-4	
Toluene	ND	ug/L	5.0	1		08/12/09 12:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		08/12/09 12:09	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		08/12/09 12:09	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		08/12/09 12:09	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		08/12/09 12:09	1330-20-7	
Dibromofluoromethane (S)	97 %		80-123	1		08/12/09 12:09	1868-53-7	
4-Bromofluorobenzene (S)	98 %		70-126	1		08/12/09 12:09	460-00-4	
Toluene-d8 (S)	91 %		80-116	1		08/12/09 12:09	2037-26-5	

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

QC Batch: WETA/3994 Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.

Associated Lab Samples: 5029085002

METHOD BLANK: 331038 Matrix: Water

Associated Lab Samples: 5029085002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	08/07/09 19:22	

LABORATORY CONTROL SAMPLE: 331039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.96	96	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 331040 331041

Parameter	Units	5029062003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Nitrogen, Nitrate	mg/L	ND	1	1	0.87	0.84	80	77	90-110	3	20	M3

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 331042 331043

Parameter	Units	5029042012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Nitrogen, Nitrate	mg/L	ND	1	1	0.93	0.95	88	90	90-110	3	20	M0

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

QC Batch: MSV/17943 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV

Associated Lab Samples: 5029085001, 5029085002, 5029085003, 5029085004, 5029085005

METHOD BLANK: 332481 Matrix: Water

Associated Lab Samples: 5029085001, 5029085002, 5029085003, 5029085004, 5029085005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	08/12/09 08:42	
1,1-Dichloroethene	ug/L	ND	5.0	08/12/09 08:42	
Benzene	ug/L	ND	5.0	08/12/09 08:42	
Carbon tetrachloride	ug/L	ND	5.0	08/12/09 08:42	
Chloroform	ug/L	ND	5.0	08/12/09 08:42	
cis-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 08:42	
Ethylbenzene	ug/L	ND	5.0	08/12/09 08:42	
Methylene chloride	ug/L	ND	5.0	08/12/09 08:42	
Naphthalene	ug/L	ND	5.0	08/12/09 08:42	
Tetrachloroethene	ug/L	ND	5.0	08/12/09 08:42	
Toluene	ug/L	ND	5.0	08/12/09 08:42	
trans-1,2-Dichloroethene	ug/L	ND	5.0	08/12/09 08:42	
Trichloroethene	ug/L	ND	5.0	08/12/09 08:42	
Vinyl chloride	ug/L	ND	2.0	08/12/09 08:42	
Xylene (Total)	ug/L	ND	10.0	08/12/09 08:42	
4-Bromofluorobenzene (S)	%	94	70-126	08/12/09 08:42	
Dibromofluoromethane (S)	%	97	80-123	08/12/09 08:42	
Toluene-d8 (S)	%	101	80-116	08/12/09 08:42	

LABORATORY CONTROL SAMPLE: 332482

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.6	89	69-136	
1,1-Dichloroethene	ug/L	50	44.8	90	63-128	
Benzene	ug/L	50	46.4	93	78-127	
Carbon tetrachloride	ug/L	50	46.7	93	62-143	
Chloroform	ug/L	50	47.6	95	74-131	
cis-1,2-Dichloroethene	ug/L	50	47.8	96	74-128	
Ethylbenzene	ug/L	50	47.1	94	81-126	
Methylene chloride	ug/L	50	40.4	81	32-164	
Naphthalene	ug/L	50	45.2	90	61-135	
Tetrachloroethene	ug/L	50	39.3	79	60-119	
Toluene	ug/L	50	48.0	96	75-129	
trans-1,2-Dichloroethene	ug/L	50	46.6	93	71-126	
Trichloroethene	ug/L	50	46.3	93	74-130	
Vinyl chloride	ug/L	50	46.0	92	55-141	
Xylene (Total)	ug/L	150	144	96	76-132	
4-Bromofluorobenzene (S)	%			100	70-126	
Dibromofluoromethane (S)	%			97	80-123	
Toluene-d8 (S)	%			100	80-116	

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Michigan Plaza/M01046

Pace Project No.: 5029085

Parameter	Units	5029087003		MS Spike		MSD Spike		MS Result		MSD Result		MS % Rec		MSD % Rec		% Rec		Max	
		Result	Conc.	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Limits	RPD	RPD	Qual	
1,1,1-Trichloroethane	ug/L	ND	50	50	43.7	45.4	87	91	64-143	4	20								
1,1-Dichloroethene	ug/L	ND	50	50	42.4	45.4	85	91	55-140	7	20								
Benzene	ug/L	ND	50	50	44.1	46.6	88	93	63-141	5	20								
Carbon tetrachloride	ug/L	ND	50	50	45.6	47.4	91	95	54-145	4	20								
Chloroform	ug/L	ND	50	50	45.0	46.1	90	92	67-134	2	20								
cis-1,2-Dichloroethene	ug/L	ND	50	50	44.7	46.3	89	93	65-132	3	20								
Ethylbenzene	ug/L	ND	50	50	44.8	46.2	90	92	44-151	3	20								
Methylene chloride	ug/L	ND	50	50	41.2	42.1	82	84	46-154	2	20								
Naphthalene	ug/L	ND	50	50	35.9	34.7	72	69	44-138	3	20								
Tetrachloroethene	ug/L	ND	50	50	37.6	39.7	75	79	25-146	5	20								
Toluene	ug/L	ND	50	50	45.0	46.6	90	93	59-142	3	20								
trans-1,2-Dichloroethene	ug/L	ND	50	50	50.7	52.2	101	104	60-137	3	20								
Trichloroethene	ug/L	ND	50	50	43.5	45.0	87	90	61-137	3	20								
Vinyl chloride	ug/L	ND	50	50	47.1	51.2	94	102	51-144	8	20								
Xylene (Total)	ug/L	ND	150	150	134	143	90	95	44-152	6	20								
4-Bromofluorobenzene (S)	%						90	93	70-126		20								
Dibromofluoromethane (S)	%						99	100	80-123		20								
Toluene-d8 (S)	%						99	99	80-116		20								

Date: 08/13/2009 01:04 PM

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Michigan Plaza/M01046  
Pace Project No.: 5029085

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

### ANALYTE QUALIFIERS

M0        Matrix spike recovery was outside laboratory control limits.

M3        Matrix spike recovery was outside laboratory control limits due to matrix interferences.

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:																																																																																																												
Company: <b>Mundell &amp; Associates</b>		Report To: <b>Leona Latour</b>		Attention: <b>Melanie Tessier</b>																																																																																																												
Address: <b>110 S. Downey Ave</b>		Copy To: <b>Chris Tardos</b>		Company Name: <b>Sonne</b>																																																																																																												
Email To: <b>Indi@napsis.in</b>		Purchase Order No.: <b>317-630-1005</b>		Address: <b>5029085</b>																																																																																																												
Phone: <b>317-630-1005</b>		Project Name: <b>Michigan Plaza</b>		Fax Quote: <b>317-630-1005</b>																																																																																																												
Requested Due Date/TAT: <b>8/17/09</b>		Project Number: <b>M01046</b>		Reference: <b>Project Manager:</b>																																																																																																												
Project Profile #: <b>STL</b>		Pace Project Manager: <b>TJ</b>		Site Location: <b>STATE:</b>																																																																																																												
<b>Section D</b> Required Client Information																																																																																																																
<table border="1"> <thead> <tr> <th rowspan="2">ITEM #</th> <th rowspan="2">SAMPLE ID (A-Z 0-9 / -)</th> <th colspan="2">COLLECTED</th> <th colspan="2"># OF CONTAINERS</th> </tr> <tr> <th>MATRIX CODES MATRIX / CODE</th> <th>COMPOSITE START</th> <th>COMPOSITE END/GRAB</th> <th>SAMPLE TEMP AT COLLECTION</th> <th>Preservatives</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MW-1C08S</td> <td>WT G</td> <td></td> <td>8/7/09</td> <td>11:25</td> <td>3</td> <td>X</td> </tr> <tr> <td>2</td> <td>MW-1C08D</td> <td>WT</td> <td></td> <td>10:45</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>MW-P-04</td> <td>WT</td> <td></td> <td>12:00</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>EB</td> <td>WT</td> <td>NA</td> <td>NA</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>EB</td> <td>WT</td> <td>NA</td> <td>8/7/09</td> <td>12:00</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						ITEM #	SAMPLE ID (A-Z 0-9 / -)	COLLECTED		# OF CONTAINERS		MATRIX CODES MATRIX / CODE	COMPOSITE START	COMPOSITE END/GRAB	SAMPLE TEMP AT COLLECTION	Preservatives	1	MW-1C08S	WT G		8/7/09	11:25	3	X	2	MW-1C08D	WT		10:45				3	MW-P-04	WT		12:00				4	EB	WT	NA	NA				5	EB	WT	NA	8/7/09	12:00			6								7								8								9								10								11								12							
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<b>Temp in °C</b> <b>Received on</b> <b>Y/N</b> <b>Custody Seal</b> <b>Y/N</b> <b>Samples intact</b> <b>Y/N</b> <i>Rebatory/late fee: \$100.00 per month</i>																																																																																																																
<b>F-ALL-Q-020rev.07, 15-May-2007</b>																																																																																																																

## Sample Condition Upon Receipt

Pace Analytical

Client Name: Mundell & Assoc. Project # 5029085Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noPacking Material:  Bubble Wrap  Bubble Bags  None  Other foamThermometer Used 123456 Type of Ice: Wet Blue None Samples on ice, cooling process has begunCooler Temperature 2.4°C and 23.6°C Biological Tissue is Frozen: Yes  NoComments: \_\_\_\_\_  
Date and Initials of person examining contents: 8/7/09 mg

Temp should be above freezing to 6°C

Chain of Custody Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Leena Lothe Date/Time: 8/7/09 email

Comments/ Resolution:

Nitrate NOT marked on COC - phoned earlier to say it was coming - MW-1685.

Project Manager Review:

Date: 8/7/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

CLIENT: Mundell & Associates

**Sample Container Count**

*Pace Analytical*  
www.paceanalytical.com

COC PAGE 1 of 1  
COC ID# 1247464

Project # 9029085

Sample Line Item	DG9H	AG1U	WGFU	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1	3												
2	3												
3	3												
4	3												
5	3												
6													
7													
8													
9													
10													
11													
12													

**Container Codes**

DG9H	40mL HCl amber vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	BP1S	1 liter H <sub>2</sub> SO4 plastic	BP1T	1 liter H <sub>2</sub> SO4 amber glass	BP1U	1 liter H <sub>2</sub> SO4 amber glass	DG9P	40mL TSP amber vial
AG1U	1 liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H <sub>2</sub> SO4 plastic	BP1T	1 liter H <sub>2</sub> SO4 plastic	BP1U	1 liter unpreserved plastic	BP1T	1 liter Na Thiosulfate amber gl	DG9T	40mL Na Thio amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H <sub>2</sub> SO4 amber glass	BP1U	1 liter unpreserved plastic	BP1T	1 liter NaOH, Zn, Ac	BP1Z	1 liter NaOH, Zn, Ac	BP1U	40mL unpreserved amber vial	DG9U	40mL unpreserved amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	BP2A	500mL NaOH, Asc Acid plastic	BP2A	500mL NaOH, Asc Acid plastic	BP2A	500mL NaOH, Asc Acid plastic	JG FU	4oz unpreserved amber wide
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2O	500mL NaOH plastic	BP2Z	500mL NaOH, Zn Ac	BP2Z	500mL NaOH, Zn Ac	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP2U	500mL unpreserved plastic	AG2S	500mL H <sub>2</sub> SO4 amber glass	BP2O	500mL NaOH plastic	BP3A	250mL NaOH, Asc Acid plastic	BP3A	250mL NaOH, Asc Acid plastic	BP3A	250mL NaOH, Asc Acid plastic	VG9H	40mL HCl clear vial
BP2S	500mL H <sub>2</sub> SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	BP3C	250mL NaOH plastic	BP3C	250mL NaOH plastic	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3A	250mL NaOH, Asc Acid plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP3Z	250mL NaOH, Zn Ac plastic	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	BG1S	1 liter H <sub>2</sub> SO4 clear glass	BG1S	1 liter H <sub>2</sub> SO4 clear glass	C	Air Cassettes	VSG	Headspace septa vial & HCl
BP3S	250mL H <sub>2</sub> SO4 plastic	BG1T	1 liter Na Thiosulfate clear gla	BG1T	1 liter Na Thiosulfate clear gla	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfite amber vial	DG9B	40mL Na Bisulfite amber vial	WGFX	4oz wide jar w/hexane wipe
AG3S	250mL H <sub>2</sub> SO4 glass amber	BG1U	1 liter unpreserved glass	BG1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag	ZPLC	Ziploc Bag		
AG1S	1 liter H <sub>2</sub> SO4 amber glass	BP1A	1 liter NaOH, Asc Acid plastic										
BP1U	1 liter unpreserved plastic												

## **APPENDIX B**

### Air Mitigation Systems: Pounds of Contaminants Removed

Air Mitigation System - Historical Air Analytical Results													
Michigan Plaza													
Indianapolis, Indiana													
MUNDELL Project No.: M01046													
Sample Date	Perchloroethylene (PCE)												
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	
	(ppmv)				(ppm)				(µg/m³)				
9/21/2006	0.6300	0.7900	0.6700	0.2800	0.0043	0.0054	0.0046	0.0019	4281.48	5368.84	4553.32	1902.88	
10/6/2006	0.8800	0.6700	0.9700	0.3100	0.0060	0.0046	0.0066	0.0021	5980.48	4553.32	6592.12	2106.76	
10/13/2006	0.6800	0.3600	0.5200	0.2100	0.0046	0.0024	0.0035	0.0014	4621.28	2446.56	3533.92	1427.16	
10/20/2006	0.8700	0.5500	0.8900	0.2200	0.0059	0.0037	0.0060	0.0015	5912.52	3737.80	6048.44	1495.12	
11/17/2006	0.8100	0.4700	0.7800	0.1500	0.0055	0.0032	0.0053	0.0010	5504.76	3194.12	5300.88	1019.40	
12/27/2006	0.7400	0.4700	0.7500	0.1100	0.0050	0.0032	0.0051	0.0007	5029.04	3194.12	5097.00	747.56	
3/30/2007	0.5100	0.1800	0.5700	0.0310	0.0035	0.0012	0.0039	0.0002	3465.96	1223.28	3873.72	210.68	
6/15/2007	<.0100	0.3100	0.2100	0.4600	BDL	0.0021	0.0014	0.0031	BDL	2106.76	1427.16	3126.16	
10/16/2007	0.3900	0.2400	0.2800	0.0670	0.0027	0.0016	0.0019	0.0005	2650.44	1631.04	1902.88	455.33	
12/14/2007	0.5800	0.3400	0.5200	0.1400	0.0039	0.0023	0.0035	0.0010	3941.68	2310.64	3533.92	951.44	
3/27/2008	0.5500	NS	0.5600	0.0740	0.0037	NS	0.0038	0.0005	3737.80	NS	3805.76	502.90	
4/1/2008	NS	0.3600	NS	NS	NS	0.0024	NS	NS	NS	2446.56	NS	NS	
6/2/2008	0.7200	0.56	0.49	0.1	0.0049	0.0038	0.0033	0.0007	4893.12	3805.76	3330.04	679.60	
9/12/2008	0.4800	0.47	0.53	0.13	0.0033	0.0032	0.0036	0.0009	3262.08	3194.12	3601.88	883.48	
11/26/2008	0.4600	NS	0.36	0.11	0.0031	NS	0.0024	0.0007	3126.16	NS	2446.56	747.56	
12/11/2008	0.4600	NS	0.36	0.11	0.0031	NS	0.0024	0.0007	3126.16	NS	2446.56	747.56	
3/24/2009	0.45	NS	0.55	0.005	0.0031	NS	0.0037	0.00003	3058.20	NS	3737.80	33.98	
6/15/2009	0.43	NS	0.42	0.02	0.0029	NS	0.0028543	0.0001	2922.28	NS	2854.32	135.92	
8/31/2009	0.36	0.16	0.47	0.014	0.0024	0.0011	0.0032	0.0001	2446.56	1087.36	3194.12	95.14	

\* Numbers in red indicate half the detection limit.

Air Mitigation - Historical Air Analytical Results													
Michigan Plaza													
Indianapolis, Indiana													
MUNDELL Project No.: M01046													
Sample Date	Trichloroethylene (TCE)												
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	
	(ppmv)				(ppm)				(\mu g/m^3)				
9/21/2006	0.0240	0.0120	<0.0100	<0.0100	0.0001	0.0001	BDL	BDL	129.24	64.62	BDL	BDL	
10/6/2006	0.0120	<0.0100	<0.0100	<0.0100	0.0001	BDL	BDL	BDL	64.62	BDL	BDL	BDL	
10/13/2006	<0 .0100	< 0.0100	< 0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
10/20/2006	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
11/17/2006	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
12/27/2006	< 0.0100	< 0.0100	< 0.0100	< 0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
3/30/2007	< 0.0100	< 0.0100	< 0.0100	< 0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
6/15/2007	0.4600	<0.0100	<0.0100	<0.0100	<0.0100	0.0025	BDL	BDL	BDL	2,477.10	BDL	BDL	BDL
10/16/2007	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
12/14/2007	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
3/27/2008	<0.0100	NS	<0.0100	<0.0100	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	
4/1/2008	NS	<0.0100	NS	NS	NS	BDL	NS	NS	BDL	BDL	BDL	BDL	
6/2/2008	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
9/12/2008	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
11/26/2008	<0.0100	NS	<0.0100	<0.0100	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL	
12/11/2008	<0.0100	NS	<0.0100	<0.0100	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL	
3/24/2009	<0.0100	NS	<0.0100	<0.0100	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL	
6/15/2009	<0.0100	NS	<0.0100	<0.0100	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL	
8/31/2009	<0.0100	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	

\* Numbers in red indicate half the detection limit.

**Air Mitigation - Historical Air Analytical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Vinyl Chloride											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				(\mu g/m³)			
9/21/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10/6/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10/13/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10/20/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/17/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12/27/2006	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3/30/2007	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6/15/2007	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10/16/2007	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12/14/2007	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3/27/2008	<1.0000	NS	<1.0000	<1.0000	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
4/1/2008	NS	<1.0000	NS	NS	NS	BDL	NS	NS	NS	BDL	NS	NS
6/2/2008	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9/12/2008	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/26/2008	<1.0000	NS	<1.0000	<1.0000	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
12/11/2008	<1.0000	NS	<1.0000	<1.0000	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
3/24/2009	<1.0000	NS	<1.0000	<1.0000	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
6/15/2009	<1.0000	NS	<1.0000	<1.0000	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
8/31/2009	<1.0000	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

\* Numbers in red indicate half the detection limit.

Air Mitigation - Historical Air Analytical Results												
Sample Date	cis-1,2-Dichloroethylene											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				( $\mu\text{g}/\text{m}^3$ )			
9/21/2006	0.1400	<0.0200	<0.0200	<0.0200	0.0006	BDL	BDL	BDL	556.22	BDL	BDL	BDL
10/6/2006	0.0300	<0.0200	<0.0200	<0.0200	0.0001	BDL	BDL	BDL	119.19	BDL	BDL	BDL
10/13/2006	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10/20/2006	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/17/2006	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12/27/2006	0.024	<0.0200	<0.0200	<0.0200	0.0001	BDL	BDL	BDL	95.35	BDL	BDL	BDL
3/30/2007	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6/15/2007	0.2100	<0.0200	<0.0200	<0.0200	0.0008	BDL	BDL	BDL	834.33	BDL	BDL	BDL
10/16/2007	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12/14/2007	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3/27/2008	0.034	NS	<0.0200	<0.0200	0.0001	NS	BDL	BDL	135.08	NS	BDL	BDL
4/1/2008	NS	<0.0200	NS	NS	NS	BDL	NS	NS	NS	BDL	NS	NS
6/2/2008	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9/12/2008	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/26/2008	<0.0200	NS	<0.0200	<0.0200	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
12/11/2008	<0.0200	NS	<0.0200	<0.0200	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
3/24/2009	<0.0200	NS	<0.0200	<0.0200	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
6/15/2009	<0.0200	NS	<0.0200	<0.0200	BDL	NS	BDL	BDL	BDL	NS	BDL	BDL
8/31/2009	<0.0200	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

\* Numbers in red indicate half the detection limit.

**Air Mitigation System - Historical Air Analytical Results**

**Michigan Meadows Apartments**

**Indianapolis, Indiana**

**MUNDELL Project No.: M01046**

Sample Date	Perchloroethylene (PCE)								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			(\mu g/m³)		
3/27/2008	0.1300	1.2000	NS	0.0009	0.0082	NS	883.48	8155.20	NS
3/28/2008	0.0730	0.4900	NS	0.0005	0.0033	NS	496.11	3330.04	NS
4/7/2008	NS	NS	0.0760	NS	NS	0.0005	NS	NS	516.50
4/8/2008	NS	NS	0.0470	NS	NS	0.0003	NS	NS	319.41
4/24/2008	0.0540	0.1100	0.0220	0.0004	0.0007	0.0001	366.98	747.56	149.51
5/1/2008	0.0580		0.0390	0.0004	0.0000	0.0003	394.17	0.00	265.04
6/2/2008	0.0590	0.2200	0.0530	0.0004	0.0015	0.0004	400.96	1495.12	360.19
7/10/2008	0.0650	NS	0.0540	0.0004	NS	0.0004	441.74	NS	366.98
8/20/2008	NS	0.2700	NS	NS	0.0018	NS	NS	1834.92	NS
9/12/2008	0.0690	0.1800	0.0540	0.0005	0.0012	0.0004	468.92	1223.28	366.98
11/26/2008	0.0720	0.1100	0.0560	0.0005	0.0007	0.0004	489.31	747.56	380.58
12/11/2008	0.0720	0.1100	0.0560	0.0005	0.0007	0.0004	489.31	747.56	380.58
3/24/2009	0.21	0.13	0.059	0.0014	0.0009	0.0004	1427.16	883.48	400.96
6/15/2009	0.058	0.084	<0.0200	0.0004	0.00057086	BDL	394.17	570.864	BDL
8/31/2009	0.0630	0.0710	<0.0100	0.0004	0.0005	NA	428.15	482.52	NA

**Air Mitigation - Historical Air Analytical Results**

**Michigan Meadows Apartments**

**Indianapolis, Indiana**

**MUNDELL Project No.: M01046**

Sample Date	Trichloroethylene (TCE)								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			(\mu g/m³)		
3/27/2008	< 0.0100	< 0.0100	NS	BDL	BDL	NS	BDL	BDL	NS
3/28/2008	< 0.0100	< 0.0100	NS	BDL	BDL	NS	BDL	BDL	NS
4/7/2008	NS	NS	< 0.0100	NS	NS	BDL	NS	NS	BDL
4/8/2008	NS	NS	< 0.0100	NS	NS	BDL	NS	NS	BDL
4/24/2008	< 0.0100	< 0.0100	< 0.0100	BDL	BDL	BDL	BDL	BDL	BDL
5/1/2008	< 0.0100	< 0.0100	< 0.0100	BDL	BDL	BDL	BDL	BDL	BDL
6/2/2008	< 0.0100	< 0.0100	< 0.0100	BDL	BDL	BDL	BDL	BDL	BDL
7/10/2008	< 0.0100	NS	< 0.0100	BDL	NS	BDL	BDL	NS	BDL
8/20/2008	NS	<0.0100	NS	NS	BDL	NS	NS	BDL	NS
9/12/2008	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL
11/26/2008	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL
12/11/2008	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL
3/24/2009	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL
6/15/2009	<0.0100	<0.0100	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
8/31/2009	<0.0100	<0.0100	<0.0100	BDL	BDL	BDL	BDL	BDL	BDL

**Air Mitigation - Historical Air Analytical Results**

**Michigan Meadows Apartments**

**Indianapolis, Indiana**

**MUNDELL Project No.: M01046**

Sample Date	Vinyl Chloride								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			(\mu g/m³)		
3/27/2008	<1.0000	<1.0000	NS	BDL	BDL	NS	BDL	BDL	NS
3/28/2008	<1.0000	<1.0000	NS	BDL	BDL	NS	BDL	BDL	NS
4/7/2008	NS	NS	<1.0000	NS	NS	BDL	NS	NS	BDL
4/8/2008	NS	NS	<1.0000	NS	NS	BDL	NS	NS	BDL
4/24/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
5/1/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
6/2/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
7/10/2008	<1.0000	NS	<1.0000	BDL	NS	BDL	BDL	NS	BDL
8/20/2008	NS	<1.0000	NS	NS	BDL	NS	NS	BDL	NS
9/12/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
11/26/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
12/11/2008	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
3/24/2009	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL
6/15/2009	<1.0000	<1.0000	<2.0000	BDL	BDL	BDL	BDL	BDL	BDL
8/31/2009	<1.0000	<1.0000	<1.0000	BDL	BDL	BDL	BDL	BDL	BDL

**Air Mitigation - Historical Air Analytical Results**

**Michigan Meadows Apartments**

**Indianapolis, Indiana**

**MUNDELL Project No.: M01046**

Sample Date	cis-1,2-Dichloroethylene								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			(\mu g/m <sup>3</sup> )		
3/27/2008	<0.0200	<0.0200	NS	BDL	BDL	NS	BDL	BDL	NS
3/28/2008	<0.0200	<0.0200	NS	BDL	BDL	NS	BDL	BDL	NS
4/7/2008	NS	NS	<0.0200	NS	NS	BDL	NS	NS	BDL
4/8/2008	NS	NS	<0.0200	NS	NS	BDL	NS	NS	BDL
4/24/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
5/1/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
6/2/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
7/10/2008	<0.0200	NS	<0.0200	BDL	NS	BDL	BDL	NS	BDL
8/20/2008	NS	<0.0200	NS	NS	BDL	NS	NS	BDL	NS
9/12/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
11/26/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
12/11/2008	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
3/24/2009	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL
6/15/2009	<0.0200	<0.0200	<0.0400	BDL	BDL	BDL	BDL	BDL	BDL
8/31/2009	<0.0200	<0.0200	<0.0200	BDL	BDL	BDL	BDL	BDL	BDL

**Total Pounds Removed**  
**Third Quarter 2009**  
**08/31/09**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No. M01046**

**TOTAL Lbs. REMOVED**

	<u>PID Data</u>	<u>Lab Data</u>				
	PCE	PCE	TCE	VC	cis-1,2-DCE	TOTALS
B-1	15.0	23.3	1.8	9.0	0.91	35.0
B-2	6.5	7.2	0.08	3.9	0.12	11.3
B-3	30.3	42.8	0.34	16.3	0.51	60.0
B-4	24.5	10.5	0.40	19.1	0.60	30.6
B-5	8.3	3.53	0.15	7.11	0.22	11.0
B-6	7.1	5.4	0.15	6.98	0.22	12.7
B-7	9.3	1.45	0.14	6.85	0.21	8.7
<b>TOTALS:</b>	<b>101.0</b>	<b>94.2</b>	<b>3.1</b>	<b>69.3</b>	<b>2.8</b>	<b>169.3</b>

Lab Data for Air Mitigation System B-1																						
Third Quarter 2009																						
08/31/09																						
Michigan Plaza																						
3801-3823 West Michigan Street																						
Indianapolis, Indiana																						
MUNDELL Project No. M01046																						
B-1 (Lab Data)																						
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed (µg/m³)	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	B-1 (PID Readings)							
9/21/2006	0.5	73	2,190	4,281	0.00	129	0.00	1,280	0.00	556	0.00	0.00	0.00	0.00	9/21/2006	0.5	73	2,190	4.9	10,439	0.00	0.00
10/6/2006	360	73	1,576,800	5,131	0.50	97	0.01	1,280	0.13	338	0.03	0.67	0.51	0.67	9/28/2006	168	73	735,840	1.9	4,841	0.22	0.22
10/13/2006	168	73	735,840	5,301	0.24	46	0.00	1,280	0.06	80	0.00	0.31	0.75	0.98	10/6/2006	192	73	840,960	1.0	3,162	0.17	0.39
10/20/2006	168	73	735,840	5,267	0.24	27	0.00	1,280	0.06	40	0.00	0.30	0.99	1.29	10/13/2006	168	73	735,840	0.6	2,322	0.11	0.50
11/17/2006	672	73	2,943,360	5,709	1.05	27	0.00	1,280	0.24	40	0.01	1.30	2.04	2.58	10/20/2006	168	73	735,840	0.3	1,902	0.09	0.58
12/27/2006	960	73	4,204,800	5,267	1.38	27	0.01	1,280	0.34	68	0.02	1.74	3.42	4.32	11/17/2006	672	73	2,943,360	0.1	1,483	0.27	0.86
3/30/2007	2,232	73	9,776,160	4,248	2.59	27	0.02	1,280	0.78	68	0.04	3.43	6.01	7.75	12/27/2006	960	73	4,204,800	0.0	1,296	0.34	1.20
6/15/2007	1,848	73	8,094,240	1,750	0.88	1,252	0.63	1,280	0.65	437	0.22	2.38	6.89	10.13	6/15/2007	4,080	73	17,870,400	0.1	1,483	1.65	2.85
10/16/2007	2,952	73	12,929,760	1,342	1.08	1,252	1.01	1,280	1.03	437	0.35	3.48	7.98	13.61	10/16/2007	2,952	73	12,929,760	0.1	1,483	1.20	4.04
12/14/2007	1,416	73	6,202,080	3,296	1.28	27	0.01	1,280	0.50	40	0.02	1.80	9.25	15.41	12/14/2007	1,416	73	6,202,080	0.1	1,483	0.57	4.62
3/27/2008	2,496	73	10,932,480	3,840	2.62	27	0.02	1,280	0.87	88	0.06	3.57	11.87	18.98	3/27/2008	2,496	73	10,932,480	1.7	4,468	3.05	7.66
6/2/2008	1,608	73	7,043,040	4,315	1.90	27	0.01	1,280	0.56	88	0.04	2.51	13.77	21.49	6/2/2008	1,608	73	7,043,040	2.2	5,401	2.37	10.04
9/12/2008	2,448	73	10,722,240	4,078	2.73	27	0.02	1,280	0.86	40	0.03	3.63	16.49	25.11	9/12/2008	2,448	73	10,722,240	0.3	1,856	1.24	11.28
11/26/2008	1,800	73	7,884,000	3,194	1.57	27	0.01	1,280	0.63	40	0.02	2.23	18.06	27.35	11/26/2008	1,800	73	7,884,000	0.1	1,483	0.73	12.01
12/11/2008	360	73	1,576,800	3,126	0.31	27	0.00	1,280	0.13	40	0.00	0.44	18.37	27.79	12/11/2008	360	73	1,576,800	0.1	1,483	0.15	12.15
3/24/2009	2,472	73	10,827,360	3,058	2.07	27	0.02	1,280	0.86	40	0.03	2.98	20.44	30.76	3/24/2009	2,472	73	10,827,360	0.2	1,669	1.13	13.28
6/15/2009	1,992	73	8,724,960	2,922	1.59	27	0.01	1,280	0.70	40	0.02	2.32	22.03	33.09	6/15/2009	1,992	73	8,724,960	0.2	1,669	0.91	14.19
8/31/2009	1,848	73	8,094,240	2,447	1.24	27	0.01	1,280	0.65	40	0.02	1.92	23.26	35.00	8/31/2009	1,848	73	8,094,240	0.2	1,669	0.84	15.03
<b>TOTALS:</b>	<b>25,801</b>		<b>113,006,190</b>		<b>23.26</b>		<b>1.80</b>	<b>9.02</b>		<b>0.91</b>	<b>35.00</b>				<b>TOTALS:</b>	<b>25,801</b>		<b>113,006,190</b>		<b>15.03</b>		

**Lab Data for Air Mitigation System B-2**

**Third Quarter 2009**

**08/31/09**

**Michigan Plaza**

**3801-3823 West Michigan Street**

**Indianapolis, Indiana**

**MUNDELL Project No. M01046**

**B-2 (Lab Data)**

Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m3 PCE	Lbs. PCE removed	µg/m3 TCE	Lbs. TCE removed	µg/m3 VC	Lbs. VC removed	µg/m3 cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m3 VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)											
9/21/2006	0.5	37	1,110	5,369	0.00	65	0.00	1,280	0.00	40	0.00	0.00	0.00	0.00	9/21/2006	0.5	37	1,110	2.0	5,028	0.00	0.00											
10/6/2006	360	37	799,200	4,961	0.25	46	0.00	1,280	0.06	40	0.00	0.32	0.25	0.32	9/28/2006	168	37	372,960	2.0	5,028	0.12	0.12											
10/13/2006	168	37	372,960	3,500	0.08	27	0.00	1,280	0.03	40	0.00	0.11	0.33	0.43	10/6/2006	192	37	426,240	1.1	3,255	0.09	0.20											
10/20/2006	168	37	372,960	3,092	0.07	27	0.00	1,280	0.03	40	0.00	0.10	0.40	0.53	10/13/2006	168	37	372,960	0.6	2,369	0.06	0.26											
11/17/2006	672	37	1,491,840	3,466	0.32	27	0.00	1,280	0.12	40	0.00	0.45	0.72	0.98	10/20/2006	168	37	372,960	0.3	1,926	0.04	0.30											
12/27/2006	960	37	2,131,200	3,194	0.42	27	0.00	1,280	0.17	40	0.01	0.60	1.15	1.58	11/17/2006	672	37	1,491,840	0.1	1,483	0.14	0.44											
3/30/2007	2,232	38	5,088,960	2,209	0.70	27	0.01	1,280	0.41	40	0.01	1.13	1.85	2.71	12/27/2006	960	37	2,131,200	0.1	1,483	0.20	0.64											
6/15/2007	1,848	42	4,656,960	1,665	0.48	27	0.01	1,280	0.37	40	0.01	0.87	2.33	3.59	6/15/2007	4,080	41	10,036,800	0.1	1,483	0.93	1.57											
10/16/2007	2,952	48	8,501,760	1,869	0.99	27	0.01	1,280	0.68	40	0.02	1.71	3.32	5.29	10/16/2007	2,952	48	8,501,760	0.1	1,483	0.79	2.35											
12/14/2007	1,416	53	4,502,880	1,971	0.55	27	0.01	1,280	0.36	40	0.01	0.93	3.88	6.22	12/14/2007	1,416	53	4,502,880	0.1	1,483	0.42	2.77											
4/1/2008	2,616	50	7,848,000	2,379	1.16	27	0.01	1,280	0.63	40	0.02	1.82	5.04	8.05	6/2/2008	4,104	46.5	11,450,160	1.5	4,095	2.92	5.69											
6/2/2008	1,488	42	3,705,120	3,126	0.72	27	0.01	1,280	0.30	40	0.01	1.03	5.76	9.08	9/12/2008	2,448	37	5,434,560	0.5	2,229	0.76	6.45											
9/12/2008	2,448	37	5,434,560	3,450	1.17	27	0.01	1,280	0.43	40	0.01	1.63	6.93	10.71	11/26/2008	NS	NS	NS	NS	NS	NS	6.45											
11/26/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.93	10.71	12/11/2008	NS	NS	NS	NS	NS	NS	6.45											
12/11/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.93	10.71	3/24/2009	NS	NS	NS	NS	NS	NS	6.45											
3/24/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.93	10.71	6/15/2009	NS	NS	NS	NS	NS	NS	6.45											
6/15/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.93	10.71	8/31/2009	1,848	NS	NS	NS	NS	NS	6.45											
8/31/2009	1,848	37	4,102,560	1,087	0.28	27	0.01	1,280	0.33	40	0	0.62	7.21	11.33	<b>TOTALS:</b>	<b>19,177</b>		<b>49,010,070</b>		<b>7.21</b>		<b>0.08</b>		<b>3.91</b>		<b>0.12</b>		<b>11.33</b>		<b>45,095,430</b>		<b>6.45</b>	

Lab Data for Air Mitigation System B-3																						
Third Quarter 2009																						
08/31/09																						
Michigan Plaza																						
3801-3823 West Michigan Street																						
Indianapolis, Indiana																						
MUNDELL Project No. M01046																						
B-3 (Lab Data)												B-3 (PID Readings)										
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m3 PCE	Lbs. PCE removed	µg/m3 TCE	Lbs. TCE removed	µg/m3 VC	Lbs. VC removed	µg/m3 cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m3 VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
9/21/2006	0.5	132	3,960	4,553	0.00	27	0.00	1,280	0.00	40	0.00	0.00	0.00	0.00	9/21/2006	0.5	132	3,960	1.8	4,655	0.00	0.00
10/6/2006	360	132	2,851,200	5,573	0.99	27	0.00	1,280	0.23	40	0.01	1.23	0.99	1.23	9/28/2006	168	132	1,330,560	2.2	5,401	0.45	0.45
10/13/2006	168	132	1,330,560	5,063	0.42	27	0.00	1,280	0.11	40	0.00	0.53	1.41	1.76	10/6/2006	192	132	1,520,640	2.1	5,215	0.49	0.94
10/20/2006	168	132	1,330,560	4,791	0.40	27	0.00	1,280	0.11	40	0.00	0.51	1.81	2.27	10/13/2006	168	132	1,330,560	2.1	5,121	0.43	1.37
11/17/2006	672	132	5,322,240	5,675	1.88	27	0.01	1,280	0.42	40	0.01	2.33	3.69	4.60	10/20/2006	168	132	1,330,560	2.0	5,075	0.42	1.79
12/27/2006	960	132	7,603,200	5,199	2.47	27	0.01	1,280	0.61	40	0.02	3.10	6.16	7.71	11/17/2006	672	132	5,322,240	2.0	5,028	1.67	3.46
3/30/2007	2,232	132	17,677,440	4,485	4.95	27	0.03	1,280	1.41	40	0.04	6.43	11.11	14.14	12/27/2006	960	132	7,603,200	0.1	1,483	0.70	4.16
6/15/2007	1,848	132	14,636,160	2,650	2.42	27	0.02	1,280	1.17	40	0.04	3.65	13.53	17.79	6/15/2007	4,080	132	32,313,600	0.1	1,483	2.99	7.15
10/16/2007	2,952	132	23,379,840	1,665	2.43	27	0.04	1,280	1.87	40	0.06	4.39	15.95	22.18	10/16/2007	2,952	132	23,379,840	0.1	1,483	2.16	9.31
12/14/2007	1,416	132	11,214,720	2,718	1.90	27	0.02	1,280	0.90	40	0.03	2.84	17.86	25.03	12/14/2007	1,416	132	11,214,720	0.1	1,483	1.04	10.35
3/27/2008	2,496	132	19,768,320	3,670	4.53	27	0.03	1,280	1.58	40	0.05	6.19	22.38	31.21	3/27/2008	2,496	132	19,768,320	1.3	3,722	4.59	14.94
6/2/2008	1,608	132	12,735,360	3,568	2.83	27	0.02	1,280	1.02	40	0.03	3.90	25.22	35.12	6/2/2008	1,608	132	12,735,360	1.2	3,535	2.81	17.75
9/12/2008	2,448	132	19,388,160	3,466	4.19	27	0.03	1,280	1.55	40	0.05	5.82	29.41	40.94	9/12/2008	2,448	132	19,388,160	0.5	2,229	2.70	20.44
11/26/2008	1,800	132	14,256,000	3,024	2.69	27	0.02	1,280	1.14	40	0.04	3.89	32.10	44.83	11/26/2008	1,800	132	14,256,000	0.4	2,042	1.82	22.26
12/11/2008	360	132	2,851,200	2,447	0.44	27	0.00	1,280	0.23	40	0.01	0.67	32.53	45.50	12/11/2008	360	132	2,851,200	0.8	2,789	0.50	22.76
3/24/2009	2,472	132	19,578,240	3,738	4.56	27	0.03	1,280	1.56	40	0.05	6.21	37.10	51.71	3/24/2009	2,472	132	19,578,240	0.6	2,416	2.95	25.71
6/15/2009	1,992	132	15,776,640	2,854	2.81	27	0.03	1,280	1.26	40	0.04	4.13	39.91	55.85	6/15/2009	1,992	132	15,776,640	0.6	2,416	2.38	28.08
8/31/2009	1,848	132	14,636,160	3,194	2.92	27	0.02	1,280	1.17	40	0.04	4.15	42.82	59.99	8/31/2009	1,848	132	14,636,160	0.6	2,416	2.21	30.29
<b>TOTALS:</b>	<b>25,801</b>		<b>204,339,960</b>		<b>42.82</b>		<b>0.34</b>		<b>16.32</b>		<b>0.51</b>		<b>59.99</b>		<b>TOTALS:</b>	<b>25,801</b>		<b>204,339,960</b>		<b>30.29</b>		

Lab Data for Air Mitigation System B-4																						
Third Quarter 2009																						
08/31/09																						
Michigan Plaza																						
3801-3823 West Michigan Street																						
Indianapolis, Indiana																						
MUNDELL Project No. M01046																						
B-4 (Lab Data)													B-4 (PID Readings)									
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m3 PCE	Lbs. PCE removed	µg/m3 TCE	Lbs. TCE removed	µg/m3 VC	Lbs. VC removed	µg/m3 cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m3 VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
9/21/2006	0.5	132	3,960	1,903	0.00	27	0.00	1,280	0.00	40	0.00	0.00	0.00	0.00	9/21/2006	0.5	132	3,960	0.2	1,669	0.00	0.00
10/6/2006	360	132	2,851,200	2,005	0.36	27	0.00	1,280	0.23	40	0.01	0.60	0.36	0.60	9/28/2006	168	132	1,330,560	0.4	2,042	0.17	0.17
10/13/2006	168	132	1,330,560	1,767	0.15	27	0.00	1,280	0.11	40	0.00	0.26	0.50	0.86	10/6/2006	192	132	1,520,640	0.3	1,763	0.17	0.34
10/20/2006	168	132	1,330,560	1,461	0.12	27	0.00	1,280	0.11	40	0.00	0.23	0.62	1.09	10/13/2006	168	132	1,330,560	0.2	1,623	0.13	0.47
11/17/2006	672	132	5,322,240	1,257	0.42	27	0.01	1,280	0.42	40	0.01	0.86	1.04	1.95	10/20/2006	168	132	1,330,560	0.1	1,553	0.13	0.60
12/27/2006	960	132	7,603,200	883	0.42	27	0.01	1,280	0.61	40	0.02	1.06	1.46	3.01	11/17/2006	672	132	5,322,240	0.1	1,483	0.49	1.09
3/30/2007	2,232	130	17,342,640	479	0.52	27	0.03	1,280	1.38	40	0.04	1.98	1.98	4.99	12/27/2006	960	132	7,603,200	0.1	1,483	0.70	1.80
6/15/2007	1,848	125	13,887,720	1,668	1.45	27	0.02	1,280	1.11	40	0.03	2.61	3.43	7.60	6/15/2007	4,080	127.75	31,273,200	0.1	1,483	2.89	4.69
10/16/2007	2,952	128	22,627,080	1,791	2.53	27	0.04	1,280	1.81	40	0.06	4.43	5.95	12.03	10/16/2007	2,952	128	22,671,360	0.1	1,483	2.10	6.78
12/14/2007	1,416	132	11,214,720	703	0.49	27	0.02	1,280	0.90	40	0.03	1.43	6.44	13.46	12/14/2007	1,416	132	11,214,720	0.1	1,483	1.04	7.82
3/27/2008	2,496	128	19,094,400	727	0.87	27	0.03	1,280	1.52	40	0.05	2.47	7.31	15.93	3/29/2008	2,544	128	19,537,920	1.8	4,655	5.67	13.50
6/2/2008	1,608	119	11,481,120	591	0.42	27	0.02	1,280	0.92	40	0.03	1.39	7.73	17.32	6/2/2008	1,560	119	11,138,400	0.3	1,856	1.29	14.78
9/12/2008	2,448	132	19,388,160	782	0.95	27	0.03	1,280	1.55	40	0.05	2.57	8.68	19.90	9/12/2008	2,448	132	19,388,160	0.4	2,042	2.47	17.25
11/26/2008	1,800	132	14,256,000	816	0.73	27	0.02	1,280	1.14	40	0.04	1.92	9.41	21.82	11/26/2008	1,800	132	14,256,000	0.1	1,483	1.32	18.57
12/11/2008	360	132	2,851,200	748	0.13	27	0.00	1,280	0.23	40	0.01	0.37	9.54	22.19	12/11/2008	360	132	2,851,200	0.1	1,483	0.26	18.84
3/24/2009	2,832	132	22,429,440	374	0.52	27	0.04	1,280	1.79	40	0.06	2.41	10.06	24.60	3/24/2009	2,472	132	19,578,240	0.3	1,763	2.15	20.99
6/15/2009	4,464	132	35,354,880	136	0.30	27	0.06	1,280	2.82	40	0.09	3.27	10.36	27.87	6/15/2009	1,992	132	15,776,640	0.3	1,856	1.83	22.82
8/31/2009	3,840	132	30,412,800	95	0.18	27	0.05	1,280	2.43	40	0.08	2.74	10.54	30.61	8/31/2009	1,848	132	14,636,160	0.3	1,856	1.69	24.51
<b>TOTALS:</b>	<b>30,625</b>		<b>238,781,880</b>		<b>10.54</b>		<b>0.40</b>		<b>19.07</b>		<b>0.60</b>		<b>30.61</b>		<b>TOTALS:</b>	<b>25,801</b>		<b>200,763,720</b>		<b>24.51</b>		

## **Lab Data for Air Mitigation System B-5**

Third Quarter 2009

08/31/09

Michigan Plaza

3801-3823 West Michigan Street

## **Indianapolis, Indiana**

MUNDELL Project No. M01046

## **Lab Data for Air Mitigation System B-6**

Third Quarter 2009

08/31/09

Michigan Plaza

**3801-3823 West Michigan Street**

## **Indianapolis, Indiana**

MUNDELL Project No. M01046

B-6 (Lab Data)															B-6 (PID Readings)												
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m3 PCE	Lbs. PCE removed	µg/m3 TCE	Lbs. TCE removed	µg/m3 VC	Lbs. VC removed	µg/m3 cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m3 VOCs	Lbs. VOCs Removed	Cum Tot lbs Remove (Est from PID)					
3/27/2008	0.5	130	3,900	8,155	0.00	27	0.00	1,280	0.00	40	0.00	0.00	0.00	0.00	3/29/2008	50	110	330,000	1.7	4,468	0.09	0.09					
3/28/2008	24	119	171,144	5,743	0.06	27	0.00	1,280	0.01	40	0.00	0.08	0.06	0.08	3/31/2008	48	111	319,680	0.1	1,483	0.03	0.12					
4/24/2008	648	114	4,426,488	2,039	0.56	27	0.01	1,280	0.35	40	0.01	0.93	0.63	1.01	5/1/2008	744	118	5,267,520	0.3	1,856	0.61	0.73					
5/1/2008	168	123	1,234,800	1,087	0.08	27	0.00	1,280	0.10	40	0.00	0.19	0.71	1.20	6/2/2008	768	120	5,529,600	1.1	3,349	1.16	1.89					
6/2/2008	768	120	5,506,560	1,461	0.50	27	0.01	1,280	0.44	40	0.01	0.96	1.21	2.16	9/12/2008	2,448	114	16,744,320	0.1	1,483	1.55	3.43					
9/12/2008	2,448	114	16,744,320	1,359	1.42	27	0.03	1,280	1.34	40	0.04	2.83	2.63	4.99	11/26/2008	1,800	114	12,312,000	0.2	1,669	1.28	4.72					
11/26/2008	1,800	112	12,096,000	985	0.74	27	0.02	1,280	0.97	40	0.03	1.76	3.37	6.75	12/11/2008	360	118	2,548,800	0.4	2,042	0.32	5.04					
12/11/2008	360	118	2,548,800	748	0.12	27	0.00	1,280	0.20	40	0.01	0.33	3.49	7.08	3/24/2009	2,472	118	17,501,760	0.3	1,856	2.03	7.07					
3/24/2009	2,472	118	17,501,760	883	0.96	27	0.03	1,280	1.40	40	0.04	2.44	4.46	9.52	6/15/2009	1,992	118	14,103,360	0.3	1,856	1.63	8.70					
6/15/2009	1,992	118	14,103,360	571	0.50	27	0.02	1,280	1.13	40	0.04	1.69	4.96	11.21	8/31/2009	1,848	118	13,083,840	0.3	1,856	1.51	10.21					
8/31/2009	1,848	118	13,083,840	483	0.39	27	0.02	1,280	1.04	40	0.03	1.49	5.35	12.70	<b>TOTALS:</b>	<b>12,529</b>	<b>87,420,972</b>	<b>5.35</b>	<b>0.15</b>	<b>6.98</b>	<b>0.22</b>	<b>12.70</b>	<b>TOTALS:</b>	<b>12,530</b>	<b>87,740,880</b>	<b>7.07</b>	<b>7.07</b>

## **Lab Data for Air Mitigation System B-7**

Third Quarter 2009

08/31/09

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## **Indianapolis, Indiana**

**MUNDELL Project No. M01046**